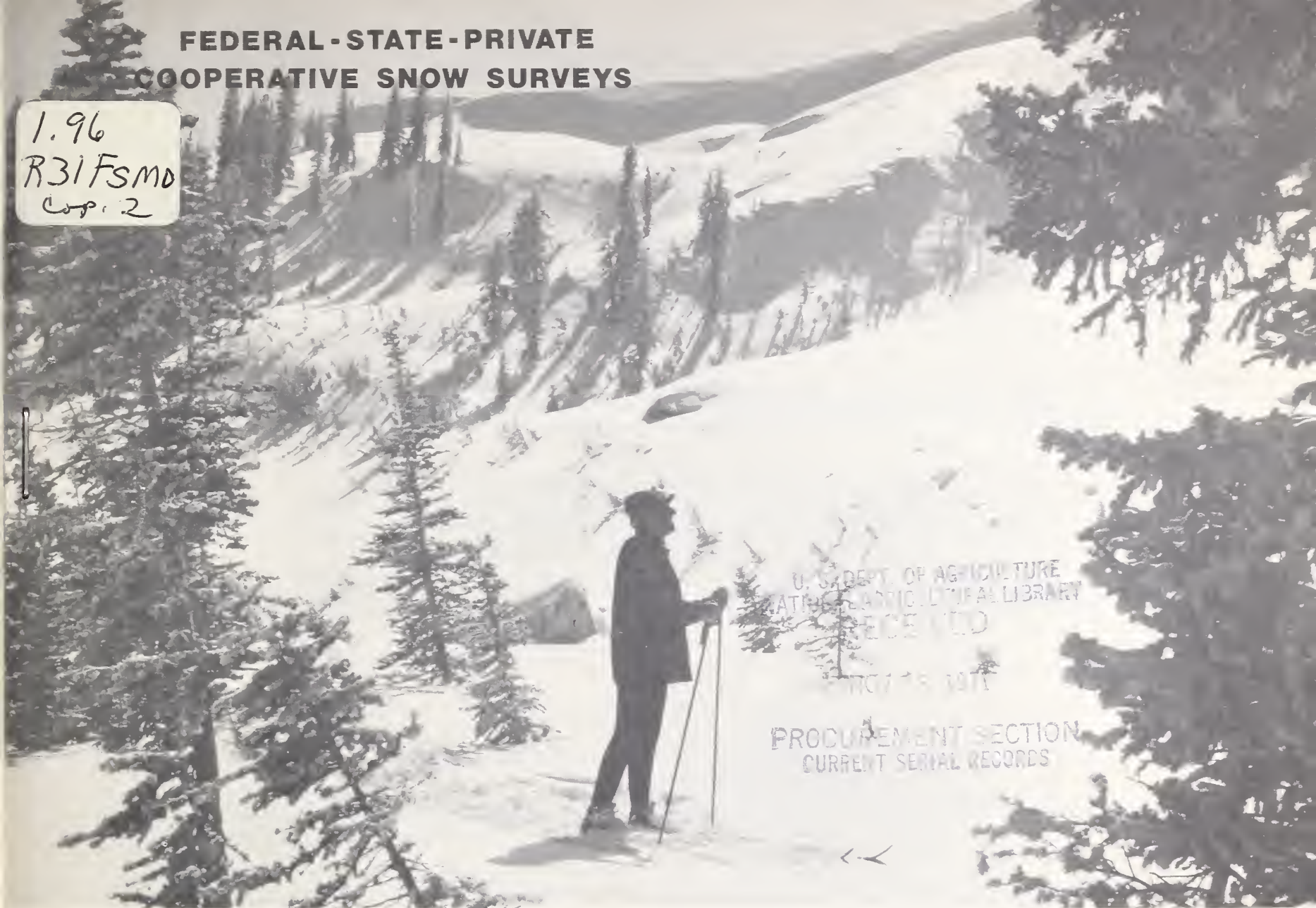


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Do not assume content reflects current scientific knowledge, policies, or practices.

**FEDERAL-STATE-PRIVATE
COOPERATIVE SNOW SURVEYS**

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WATER SUPPLY OUTLOOK FOR MONTANA

Prepared by

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

**SNOW PILLOW RECORDS
1971 WATER YEAR**

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters of key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 970, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

KENNETH E. GRANT

ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

|||||
Released by

A. B. LINFORD

STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
Bozeman, Montana

In Cooperation with

J. A. ASLESON

DIRECTOR
Montana Agricultural Experiment Station

|||||
Report prepared by

PHILLIP E. FARNES, Snow Survey Supervisor

and

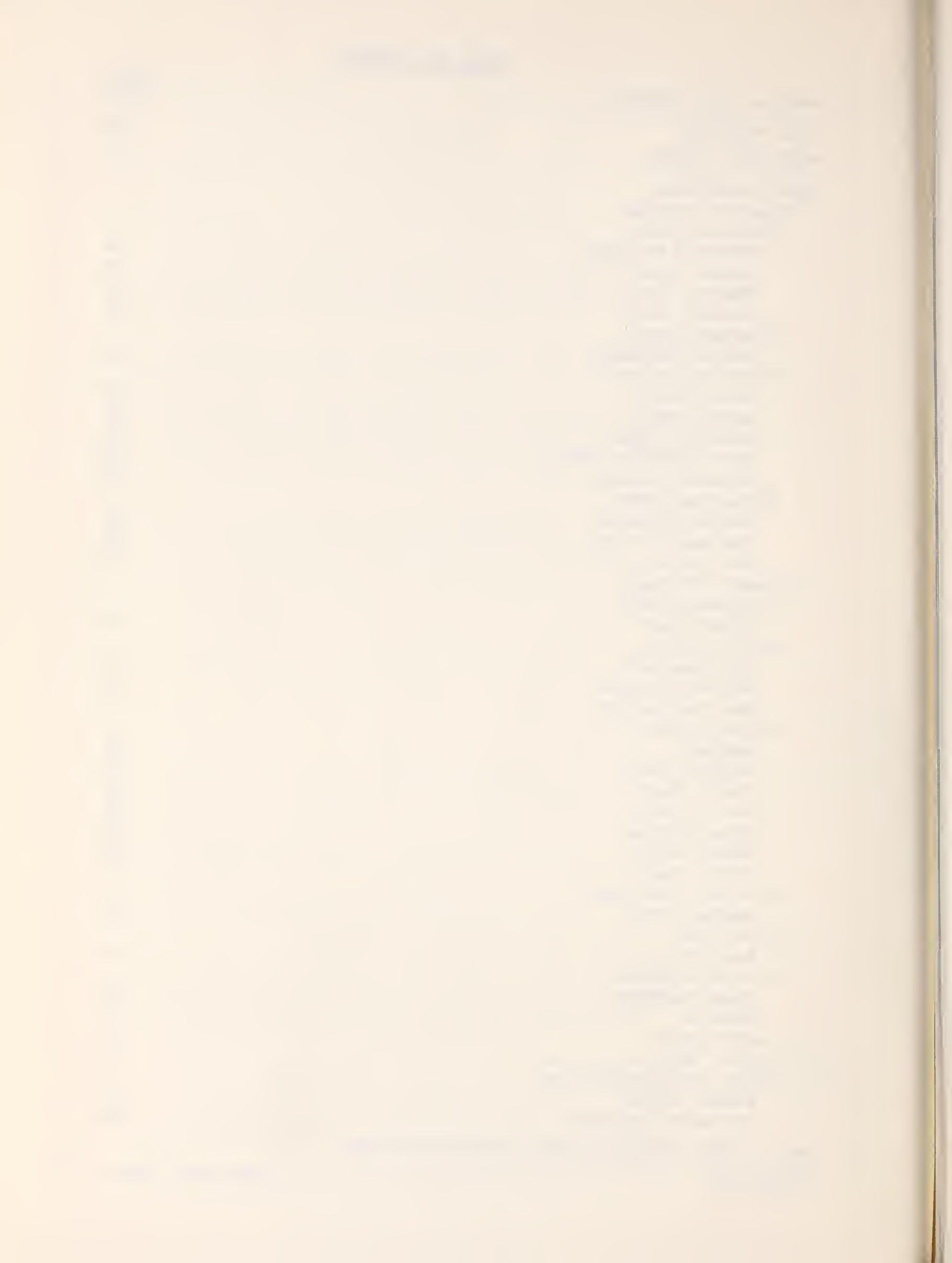
GEORGE P. CLAGETT, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE
P.O. Box 98
Bozeman, Montana 59715



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MONTANA FALL SUMMARY
October 1, 1971

COLUMBIA RIVER BASIN

Streamflow was above average in the Columbia River Basin during the spring and summer months, with the exception of a small area in the head of the Clark Fork River where near to below average flows were observed. Precipitation was well below average during late summer. This was reflected by low flows during August on some of the streams with low elevation headwaters. The heavy snowpack was helpful in maintaining streamflow on streams with higher elevation headwaters.

Storage in irrigation and multipurpose reservoirs generally is near average. Mountain soils are drier than normal.

MISSOURI RIVER BASIN

Much of the Missouri River Basin had well above average streamflow during the spring and summer months, with record or near record amounts being observed in the Missouri River headwater area. Streamflow dropped to near average on streams with headwaters along the Continental Divide, near the Canadian border. The high elevation snowpack sustained the low summer flows sufficiently to overcome the lack of precipitation during late summer. This enabled most crops to mature normally; however, low increases in production were noted in dryland areas not under irrigation.

THE HISTORY OF THE

REIGN OF

CHARLES THE FIRST
BY
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OF
GLASGOW
IN
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Reservoir storage is generally near or above average on nearly all rivers in the Missouri River Basin. Mountain soils are drier than normal.

YELLOWSTONE RIVER BASIN

The large runoff from the heavy snowpack produced record or near record amounts during the spring and summer months in the Yellowstone River Drainage. The high elevation snowpack sustained the late summer flow. Late summer precipitation was well below average in the Yellowstone Basin. Areas under irrigation sustained the most significant water shortages.

Valley and median elevation soils are generally drier than normal.

SOIL MOISTURE

JULY 1, 1971

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †

COLUMBIA RIVER BASINKootenai

Baree Trail	3800	48	7.5	6/30	6.6	3.6	5.0
Murphy Lake R. S.	3000	48	22.6	7/01	19.9	19.2	20.4
Raven R. S.	3050	48	23.0	6/30	14.7	21.0	19.4

Flathead

Desert Mountain	5600	54	8.4	7/01	9.6	8.8	8.5
Marias Pass	5250	54	6.5	6/28	6.0	5.5	5.3

Clark Fork

Black Pine	7100	48	10.0	7/01	8.7	9.8	8.9
Lubrecht Forest	4100	48	26.8		-	-	-
Seeley Lake R. S.	4030	48	11.9		-	-	-
Skalkaho Summit	7260	48	10.8	6/29	10.0	10.2	10.2

Bitterroot

Gibbons Pass	7100	48	7.1	6/25	6.7	6.6	6.4
Lolo Pass	5250	48	10.6	6/29	9.9	10.0	9.6

MISSOURI RIVER BASINBeaverhead

Lakeview	6700	48	15.3	7/01	16.2	15.8	13.2
----------	------	----	------	------	------	------	------

Madison

West Yellowstone	6700	48	6.5	6/27	3.1	2.8	-
------------------	------	----	-----	------	-----	-----	---

Gallatin

Bridger Bowl	7250	48	17.0	7/08	16.4	16.4	16.3
College Site No. 2	4856	54	17.7	7/02	13.4	12.2	12.9
Lick Creek	6860	48	18.8	7/07	17.5	16.6	-
Twenty-One Mile	7150	48	10.0	6/22	9.7	9.0	8.6

Missouri Main Stem

Kings Hill	7420	48	11.8	6/30	10.5	10.8	10.8
Stemple Pass	6350	48	5.9	6/29	4.8	5.5	5.2

Milk

Beaver Creek	3950	48	20.9	6/30	10.0	12.6	-
Rocky Boy	4700	36	10.0	6/30	9.0	9.7	-

Yellowstone

Battle Ridge	6020	48	17.6	7/08	16.4	14.5	15.0
Northeast Entrance	7350	48	9.4	6/25	7.7	8.2	9.2

SOIL MOISTURE

AUGUST 1, 1971

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †

COLUMBIA RIVER BASINKootenai

Baree Trail	3800	48	7.5	8/01	4.1	-	3.8
Murphy Lake R. S.	3000	48	22.6	8/02	19.0	18.8	18.9
Raven R. S.	3050	48	23.0	8/01	13.2	-	-

Flathead

Desert Mountain	5600	54	8.4	8/02	6.7	7.9	6.4
Marias Pass	5250	54	6.5	7/26	4.8	4.4	3.9

Clark Fork

Black Pine	7100	48	10.0	7/29	8.0	9.2	8.7
Lubrecht Forest	4100	48	26.8		-	-	-
Seeley Lake R. S.	4030	48	11.9		-	-	-
Skalkaho Summit	7260	48	10.8	7/29	10.5	10.6	10.3

Bitterroot

Gibbons Pass	7100	48	7.1	7/27	4.3	5.7	5.2
Lolo Pass	5250	48	10.6	7/27	5.9	6.5	5.9

MISSOURI RIVER BASINBeaverhead

Lakeview	6700	48	15.3	8/01	16.7	9.3	8.3
----------	------	----	------	------	------	-----	-----

Madison

West Yellowstone	6700	48	6.5	7/28	2.0	2.1	-
------------------	------	----	-----	------	-----	-----	---

Gallatin

Bridger Bowl	7250	48	17.0	8/04	16.0	-	-
College Site No. 2	4856	54	17.7	7/30	18.5	12.2	9.2
Lick Creek	6860	48	18.8	8/06	14.4	15.4	15.5
Twenty-One Mile	7150	48	10.0	7/28	6.6	7.2	5.4

Missouri Main Stem

Kings Hill	7420	48	11.8	7/30	8.9	8.9	9.2
Stemple Pass	6350	48	5.9	8/02	3.4	4.2	4.2

Milk

Beaver Creek	3950	48	20.9	7/30	6.3	7.1	-
Rocky Boy	4700	36	10.1	7/30	6.7	7.9	-

Yellowstone

Battle Ridge	6020	48	17.6	8/04	12.8	-	11.2
Northeast Entrance	7350	48	9.4	8/03	5.5	6.3	6.8

SOIL MOISTURE

SEPTEMBER 1, 1971

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †
COLUMBIA RIVER BASIN							
Kootenai							
Baree Trail	3800	48	7.5	9/01	5.5	-	4.6
Murphy Lake R. S.	3000	48	22.6	9/01	18.5	18.2	18.9
Raven R. S.	3050	48	23.0	9/01	13.2	-	-
Flathead							
Desert Mountain	5600	54	8.4	8/30	4.8	4.8	5.2
Marias Pass	5250	54	6.5	8/29	3.8	3.7	3.5
Clark Fork							
Black Pine	7100	48	10.0	8/31	7.8	8.0	8.2
Lubrecht Forest	4100	48	26.8		-	-	-
Seeley Lake R. S.	4030	48	11.9	9/01	4.2	3.9	-
Skalkaho Summit	7260	48	10.8	8/31	10.1	10.0	9.7
Bitterroot							
Gibbons Pass	7100	48	7.1	8/30	2.6	2.9	4.1
Lolo Pass	5250	48	10.6	8/27	3.1	4.0	4.5
MISSOURI RIVER BASIN							
Beaverhead							
Lakeview	6700	48	15.3	9/01	14.8	7.8	6.9
Madison							
West Yellowstone	6700	48	6.5	8/31	2.6	1.2	-
Gallatin							
Bridger Bowl	7250	48	17.0	9/07	16.4	16.5	16.1
College Site No. 2	4856	54	17.7	9/03	14.1	11.2	8.6
Lick Creek	6860	48	18.8	9/10	16.6	18.0	16.4
Twenty-One Mile	7150	48	10.0	8/31	5.0	3.2	3.6
Missouri Main Stem							
Kings Hill	7420	48	11.8	8/31	5.6	6.1	7.9
Stemple Pass	6350	48	5.9	8/31	3.1	3.6	3.9
Milk							
Beaver Creek	3950	48	20.9	8/20	5.7	6.0	-
Rocky Boy	4700	36	10.1	8/31	6.2	6.7	-
Yellowstone							
Battle Ridge	6020	48	17.6	9/07	8.0	-	9.5
Northeast Entrance	7350	48	9.4		-	5.0	5.7

SOIL MOISTURE

OCTOBER 1, 1971

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †

COLUMBIA RIVER BASINKootenai

Baree Trail	3800	48	7.5	10/01	4.8	5.5	5.3
Murphy Lake R. S.	3000	48	22.6	10/04	18.4	18.3	18.6
Raven R. S.	3050	48	23.0	10/01	13.1	18.2	18.3

Flathead

Desert Mountain	5600	54	8.4	10/04	5.8	6.3	5.8
Marias Pass	5250	54	6.5	9/26	3.6	3.9	3.9

Clark Fork

Black Pine	7100	48	10.0	10/01	7.6	8.2	8.0
Lubrecht Forest	4100	48	26.8	10/04	13.3	13.4	-
Seeley Lake R. S.	4030	48	11.9		-	-	-
Skalkaho Summit	7260	48	10.8	10/01	9.7	10.3	10.3

Bitterroot

Gibbons Pass	7100	48	7.1	9/28	2.7	5.3	4.9
Lolo Pass	5250	48	10.6	10/01	2.9	4.2	4.9

MISSOURI RIVER BASINBeaverhead

Lakeview	6700	48	15.3	10/01	13.1	7.1	6.0
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Madison

West Yellowstone	6700	48	6.5	9/29	2.5	-	-
------------------	------	----	-----	------	-----	---	---

Gallatin

Bridger Bowl	7250	48	17.0	9/27	15.9	16.3	15.7
College Site No. 2	4856	54	17.7	10/01	15.2	13.5	9.4
Lick Creek	6860	48	18.8	9/28	15.9	18.6	-
Twenty-One Mile	7150	48	10.0	9/29	6.2	5.2	4.0

Missouri Main Stem

Kings Hill	7420	48	11.8	9/29	5.2	6.7	7.4
Stemple Pass	6350	48	5.9	10/01	3.8	3.5	3.8

Milk

Beaver Creek	3950	48	20.9	10/01	6.0	6.6	-
Rocky Boy	4700	36	10.1	10/01	6.2	7.9	-

Yellowstone

Battle Ridge	6020	48	17.6	9/27	8.2	12.5	10.4
Northeast Entrance	7350	48	9.4		-	6.4	6.4

Variable	Unit	Mean	SD	Range
Age	Years	65.2	7.8	45-85
Gender	Male/Female	50/50	-	-
Education	Years	12.5	2.1	8-16
Income	\$/Year	25,000	10,000	10,000-40,000
Health Status	Good/Poor	60/40	-	-
Marital Status	Married/Single	70/30	-	-
Employment	Employed/Unemployed	40/60	-	-
Living Arrangements	Alone/With Family	30/70	-	-
Access to Transportation	Yes/No	80/20	-	-
Health Insurance	Yes/No	90/10	-	-
Chronic Conditions	0-5	1.2	1.5	0-5
Functional Status	0-10	6.5	2.5	0-10
Quality of Life	0-100	75	15	50-90

Note: SD = Standard Deviation; Range = Minimum to Maximum.

Variable	Unit	Mean	SD	Range
Age	Years	65.2	7.8	45-85
Gender	Male/Female	50/50	-	-
Education	Years	12.5	2.1	8-16
Income	\$/Year	25,000	10,000	10,000-40,000
Health Status	Good/Poor	60/40	-	-
Marital Status	Married/Single	70/30	-	-
Employment	Employed/Unemployed	40/60	-	-
Living Arrangements	Alone/With Family	30/70	-	-
Access to Transportation	Yes/No	80/20	-	-
Health Insurance	Yes/No	90/10	-	-
Chronic Conditions	0-5	1.2	1.5	0-5
Functional Status	0-10	6.5	2.5	0-10
Quality of Life	0-100	75	15	50-90

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage			
			This Year	Last Year	Average	
COLUMBIA RIVER BASIN						
Flathead	Hungry Horse	3,428.0	3,241.0	2,931.0	3,331.0	
	Flathead Lake	1,791.0	1,702.0	1,694.0	1,699.0	
	Camas (4)	45.2	24.2	17.8	24.9	
	Mission Valley (8)	100.3	18.3	21.0	17.6	
Clark Fork	Georgetown Lake	31.0	30.0	30.1	26.7	
	Nevada Creek	12.6	2.6	4.1	6.5	
	Noxon Rapids	334.6	320.5	328.8	321.3	
Bitterroot	Como	34.9	3.8	0.4	1.9	
	Painted Rocks	31.7	28.0	29.5	25.2	
MISSOURI RIVER BASIN						
Beaverhead	Clark Canyon	328.9	137.3	136.7	103.0	
	Lima	84.0	42.7	39.2	17.3	
Ruby	Ruby	38.8	13.7	9.0	8.6	
Madison	Hebgen Lake	377.5	320.9	326.4	299.8	
	Ennis Lake	41.0	38.4	37.4	36.5	
Gallatin	Middle Creek	8.0	2.6	3.7	2.4	
Missouri	Canyon Ferry	2,043.0	1,808.0	1,754.0	1,749.0	
	Hauser & Helena	61.9	61.3	52.0	58.6	
	Lake Helena	10.4	10.2	7.0	9.5	
	Holter Lake	81.9	63.5	73.9	75.7	
	Smith River	10.7	3.7	4.2	5.2	
	Bair (Durand)	7.0	1.1	2.8	3.3	
	Martinsdale	23.1	8.3	10.2	6.6	
	Deadman's Basin	72.2	27.2	32.3	33.9	
	Fort Peck	19,410.0	17,120.0	17,600.0	11,850.0	
	Sun	Gibson	105.0	34.5	20.1	35.5
		Willow Creek	32.3	19.5	19.7	19.0
		Pishkun	32.0	19.0	11.9	17.1
	Marias	Lower Two Medicine	16.6	-	0.6	3.5
Four Horns		19.2	-	13.3	11.0	
Swift		30.0	17.0	18.5	13.0	
Lake Frances		112.0	64.1	90.5	83.6	
Milk	Tiber	1,347.0	533.8	557.8	689.6	
	Fresno	127.2	37.4	73.0	67.8	
	Nelson	66.8	33.9	51.0	44.1	
	Lake Sherburne	66.1	7.4	3.0	7.0	
Yellowstone	Mystic Lake	20.8	18.0	19.1	20.4	
	Tongue River	68.0	-	27.4	20.6	
	Cooney	27.5	17.3	11.1	11.0	
Big Horn	Big Horn Lake	1,356.0	1,073.0	1,051.0	-	

TABLE 1 Summary of Data on the Effect of the Use of the "Mental Status" Test		TABLE 2 Summary of Data on the Effect of the Use of the "Mental Status" Test	
Test	Result	Test	Result
1. General appearance	100%	1. General appearance	100%
2. Orientation	100%	2. Orientation	100%
3. Attention	100%	3. Attention	100%
4. Memory	100%	4. Memory	100%
5. Judgment	100%	5. Judgment	100%
6. Personality	100%	6. Personality	100%
7. Emotional stability	100%	7. Emotional stability	100%
8. Social behavior	100%	8. Social behavior	100%
9. Intellectual function	100%	9. Intellectual function	100%
10. Physical function	100%	10. Physical function	100%

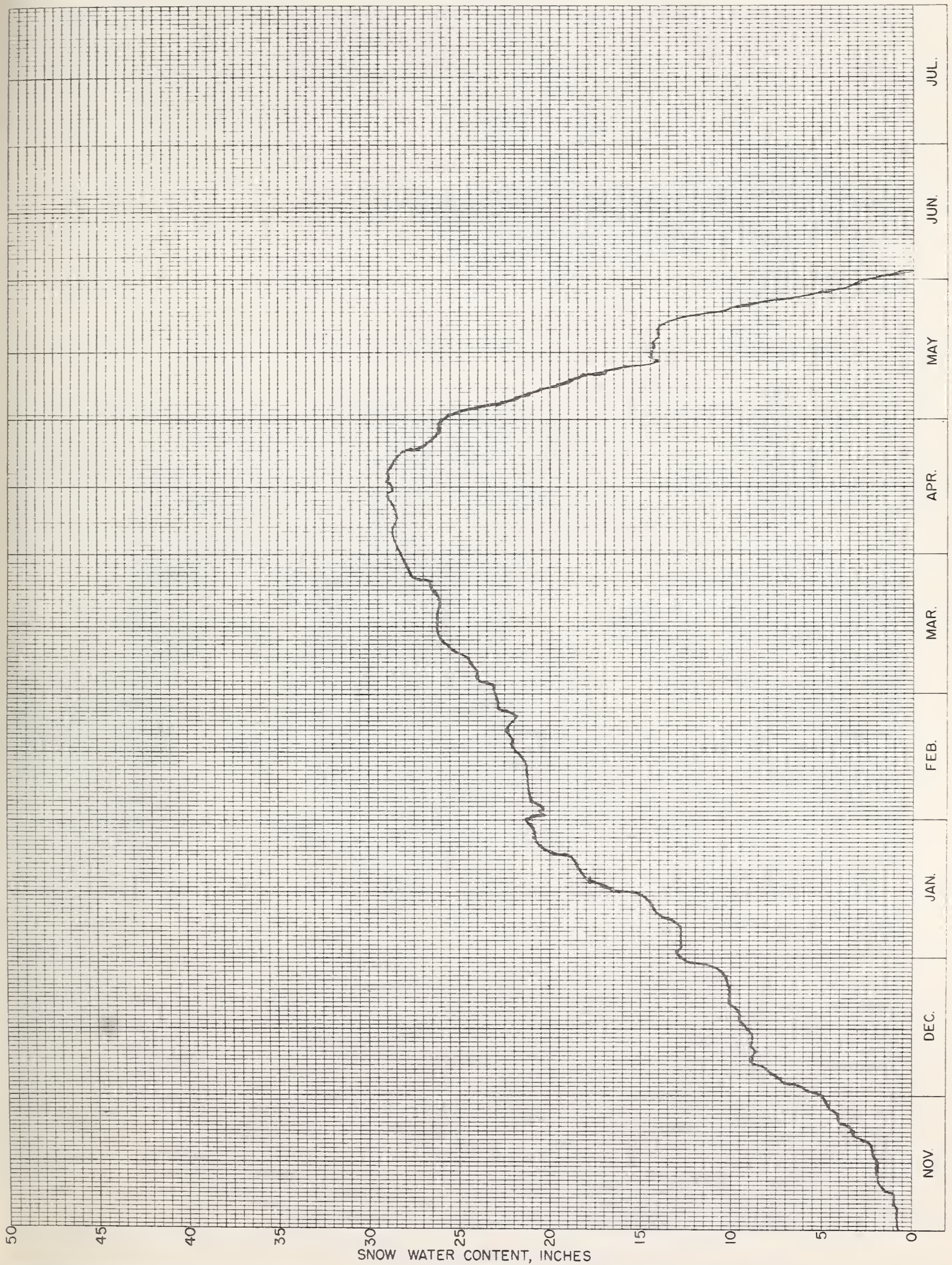
SNOW PILLOW DATA
WATER YEAR 1971

BANFIELD MOUNTAIN

No. 15A08

Elev. 5600

Drainage: Kootenai





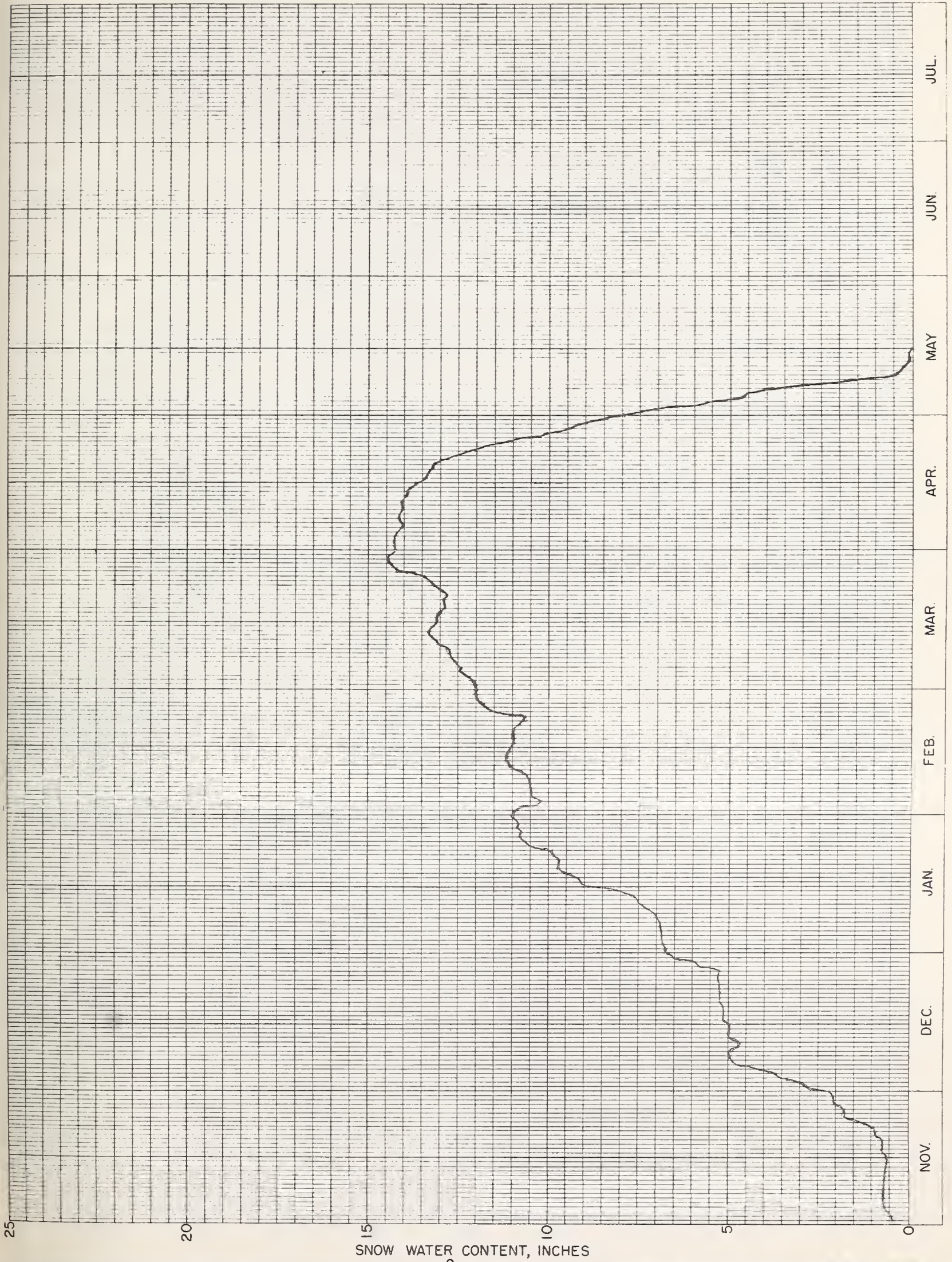
SNOW PILLOW DATA
WATER YEAR 1971

GARVER CREEK

No. 15A05

Elev. 4250

Drainage. Kootenai





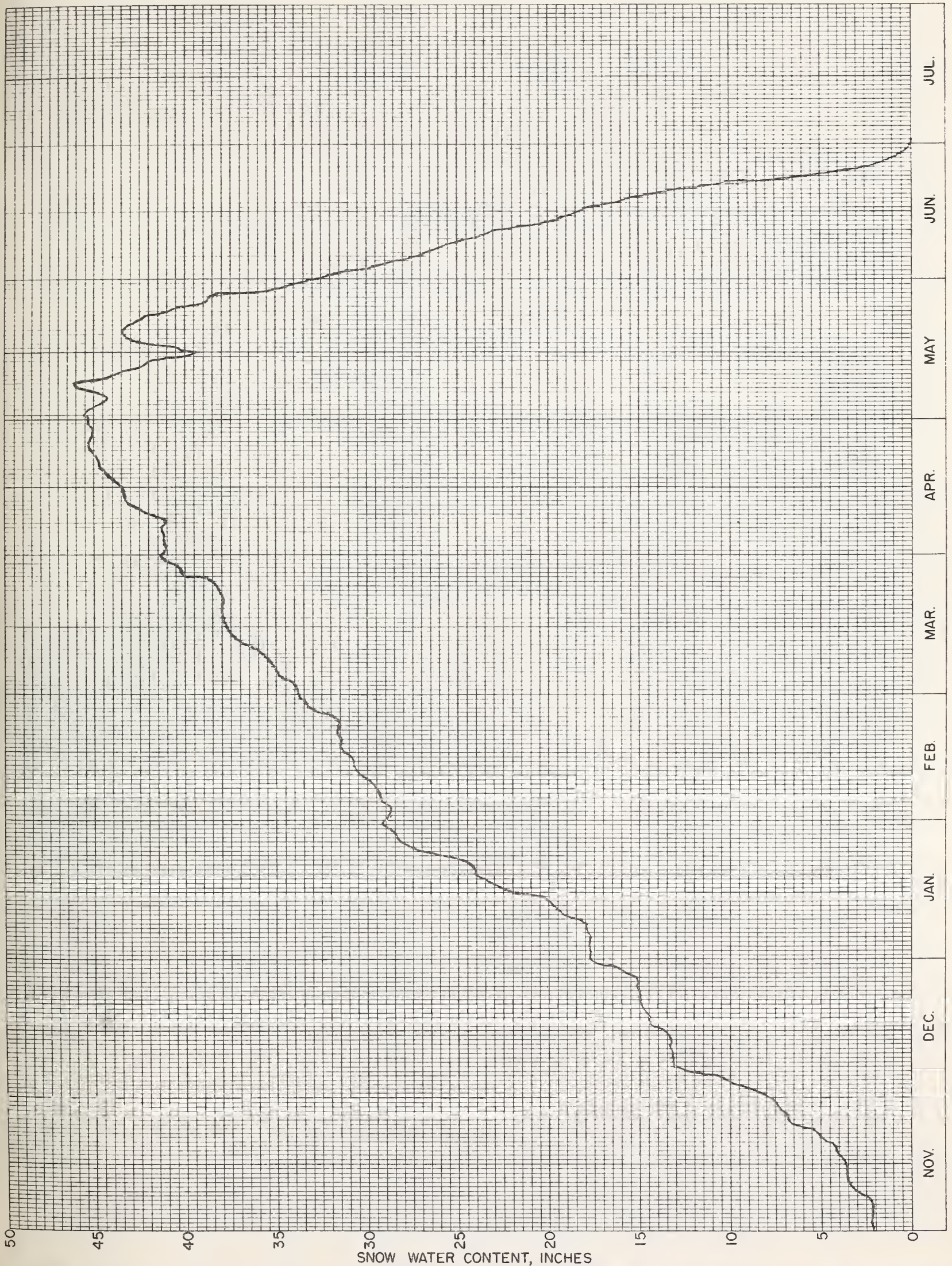
SNOW PILLOW DATA
WATER YEAR 1971

HAWKINS LAKE

No. 15A03

Elev. 6450

Drainage: Kootenai



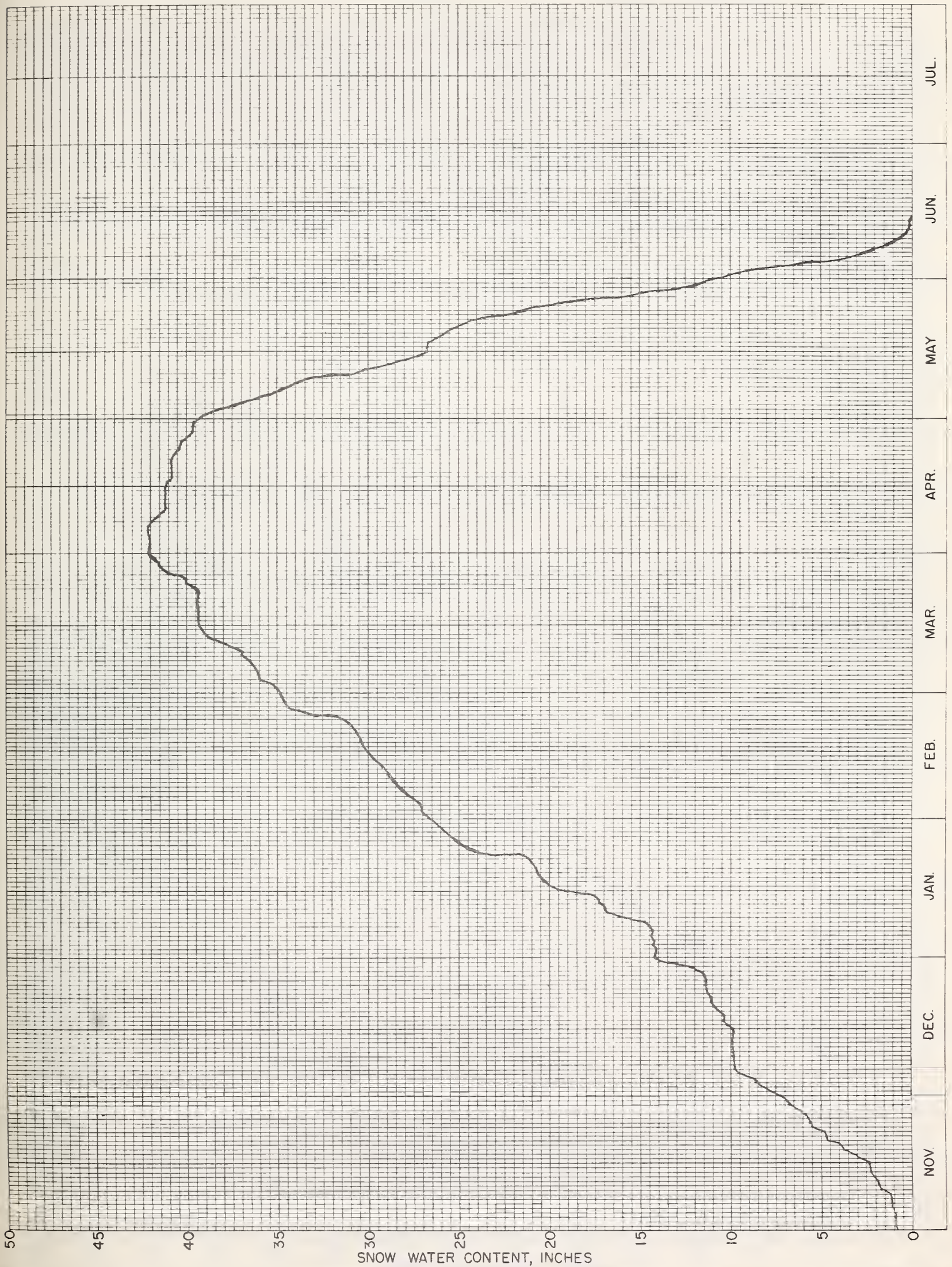
SNOW PILLOW DATA
WATER YEAR 1971

POORMAN CREEK

No. 15A12

Elev. 5100

Drainage: Kootenai





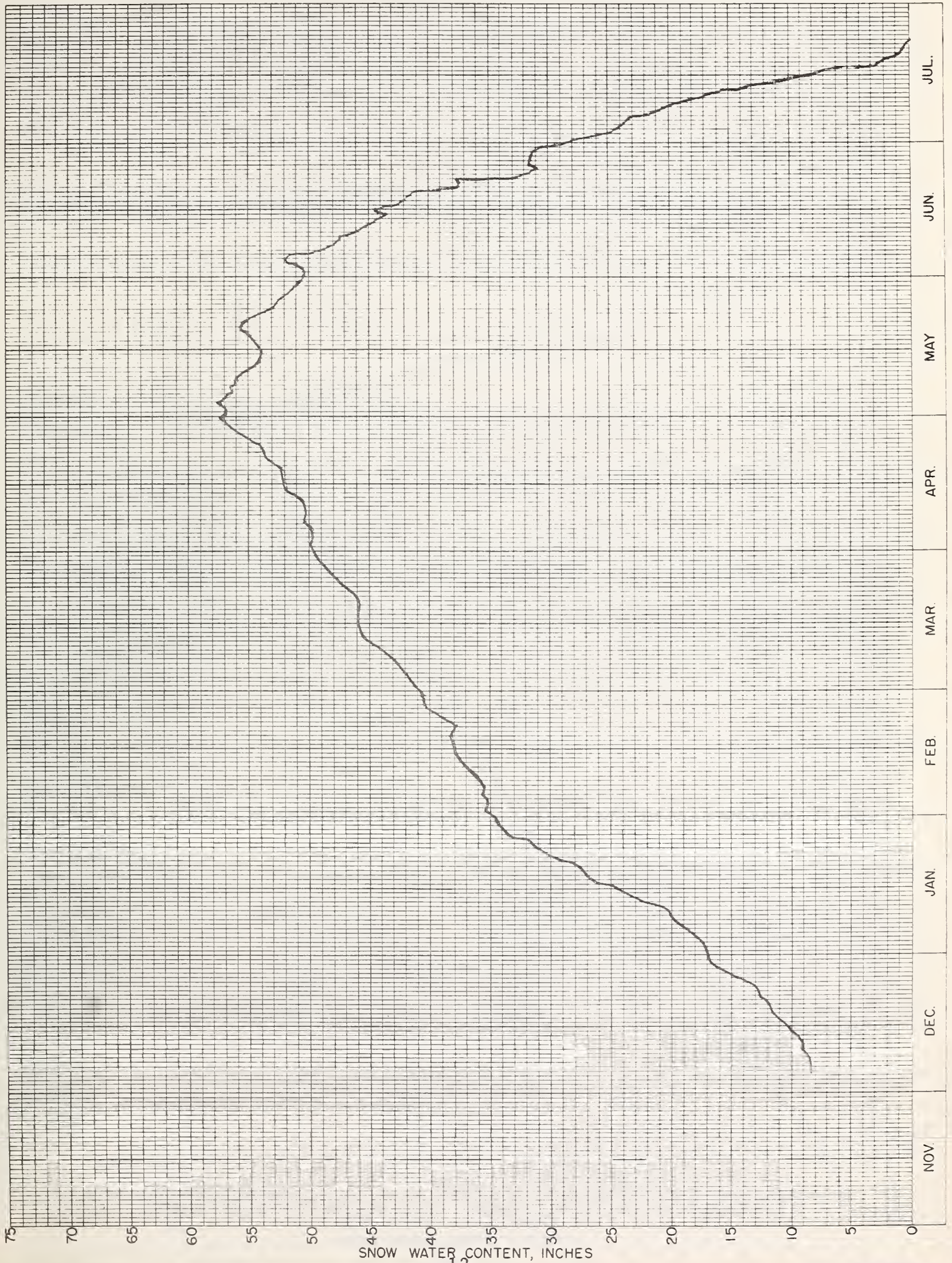
SNOW PILLOW DATA
WATER YEAR 1971

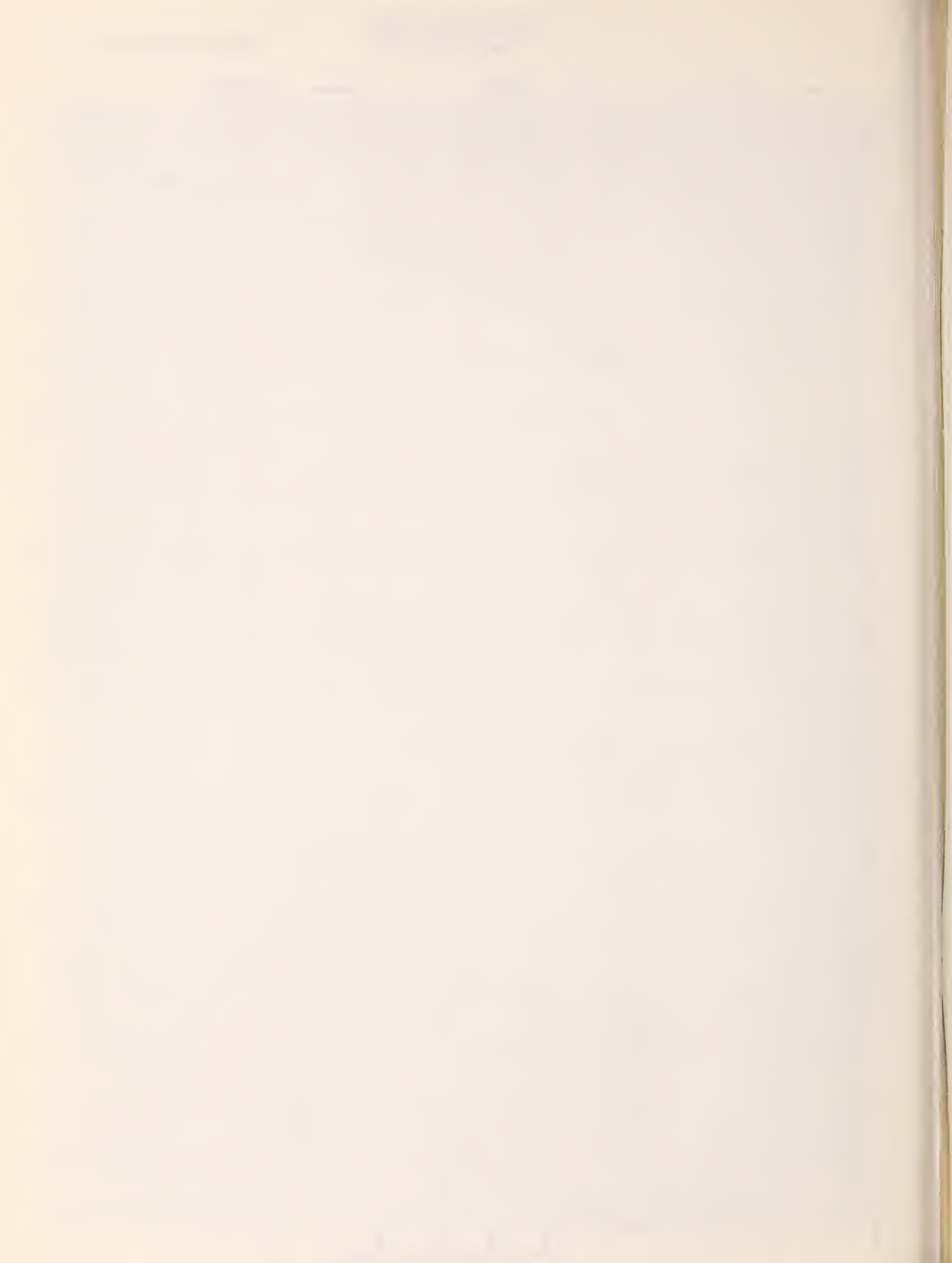
FLATTOP MOUNTAIN

No. 13A19

Elev. 6300

Drainage: Flathead

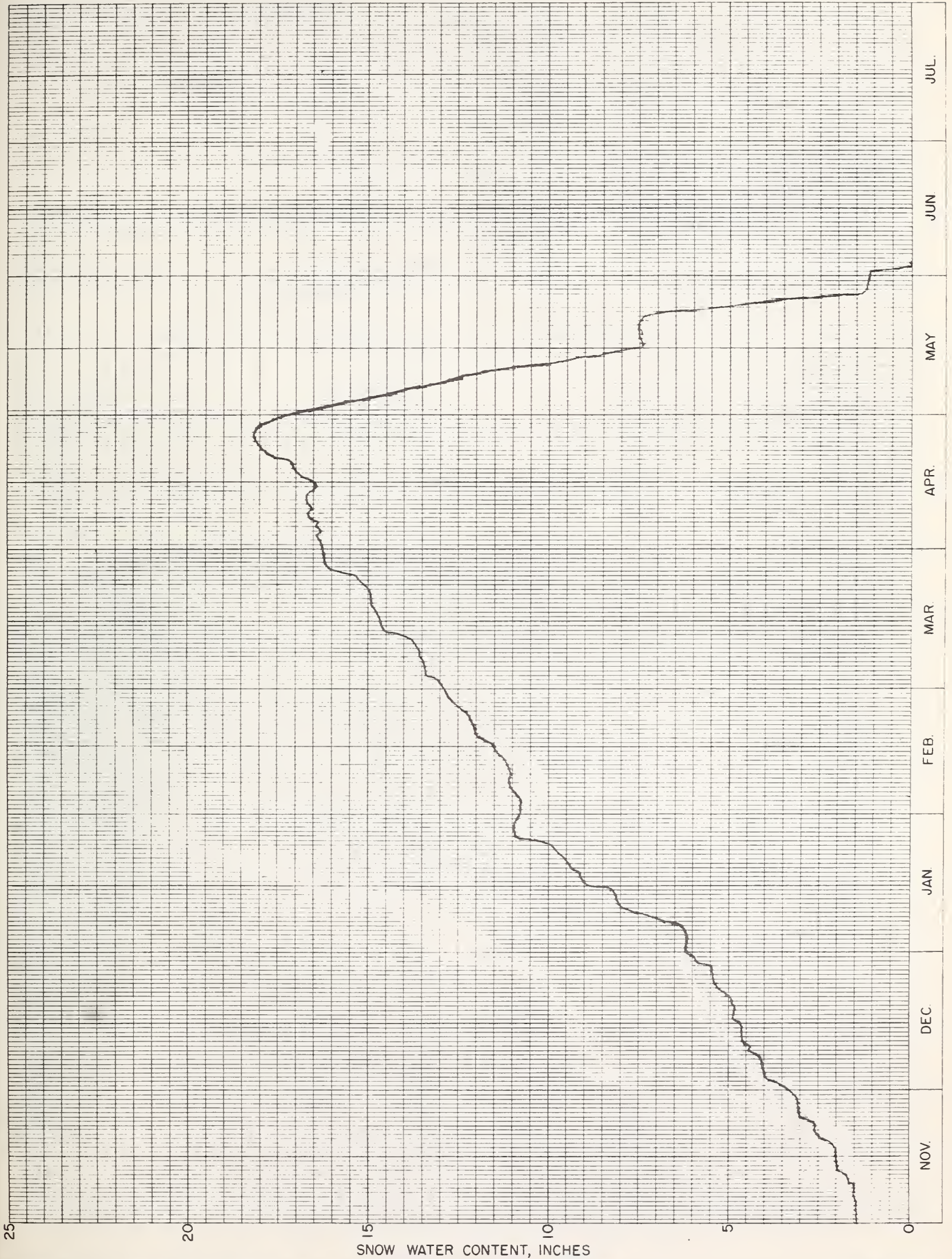




SNOW PILLOW DATA
WATER YEAR 1971

BLACK PINE

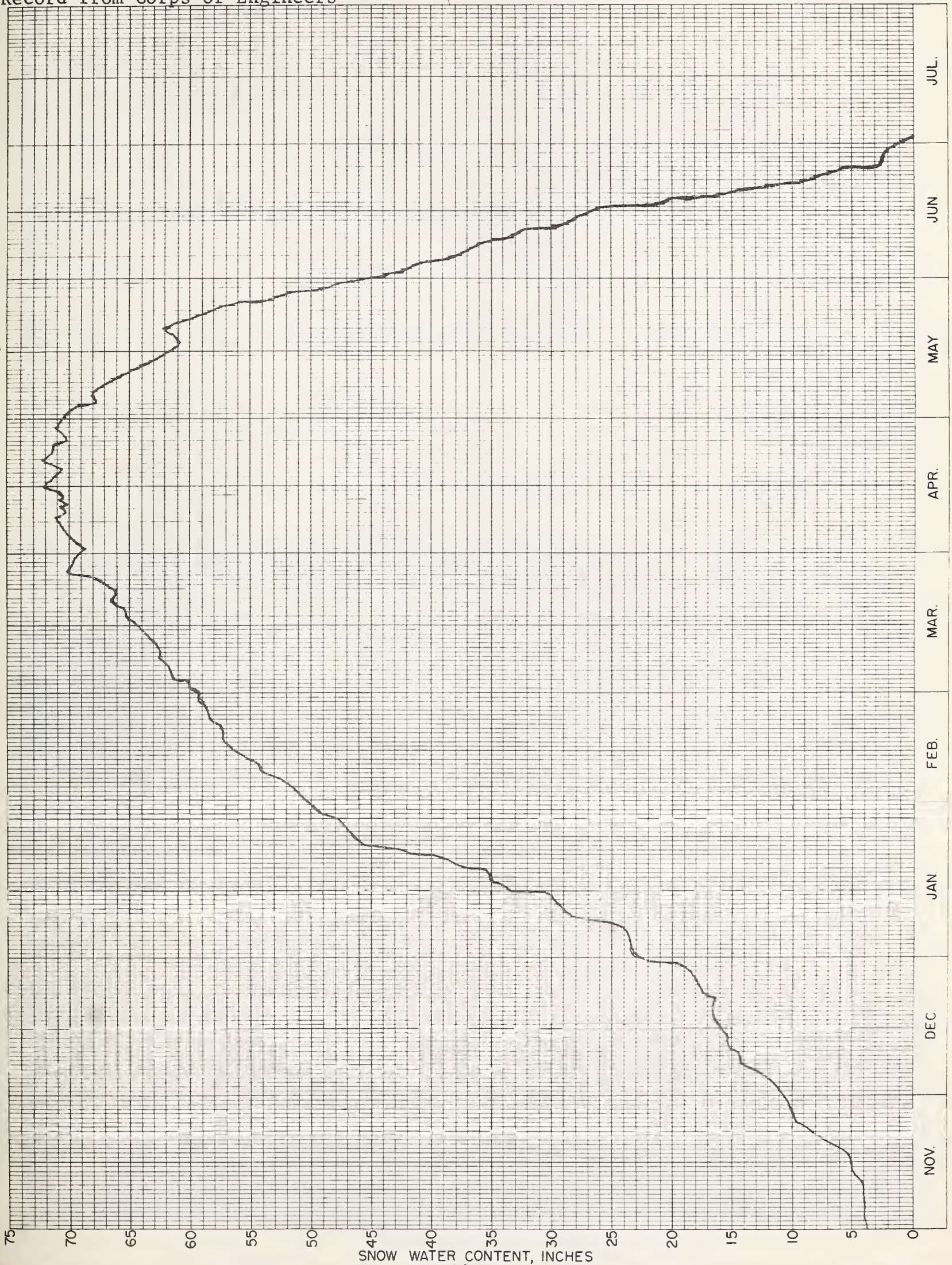
No. 13C13 Elev. 7100 Drainage. Clark Fork



SNOW PILLOW DATA
WATER YEAR 1971

HOODOO BASIN

No. 15C10 Elev. 6000 Drainage: Clark Fork
Record from Corps of Engineers





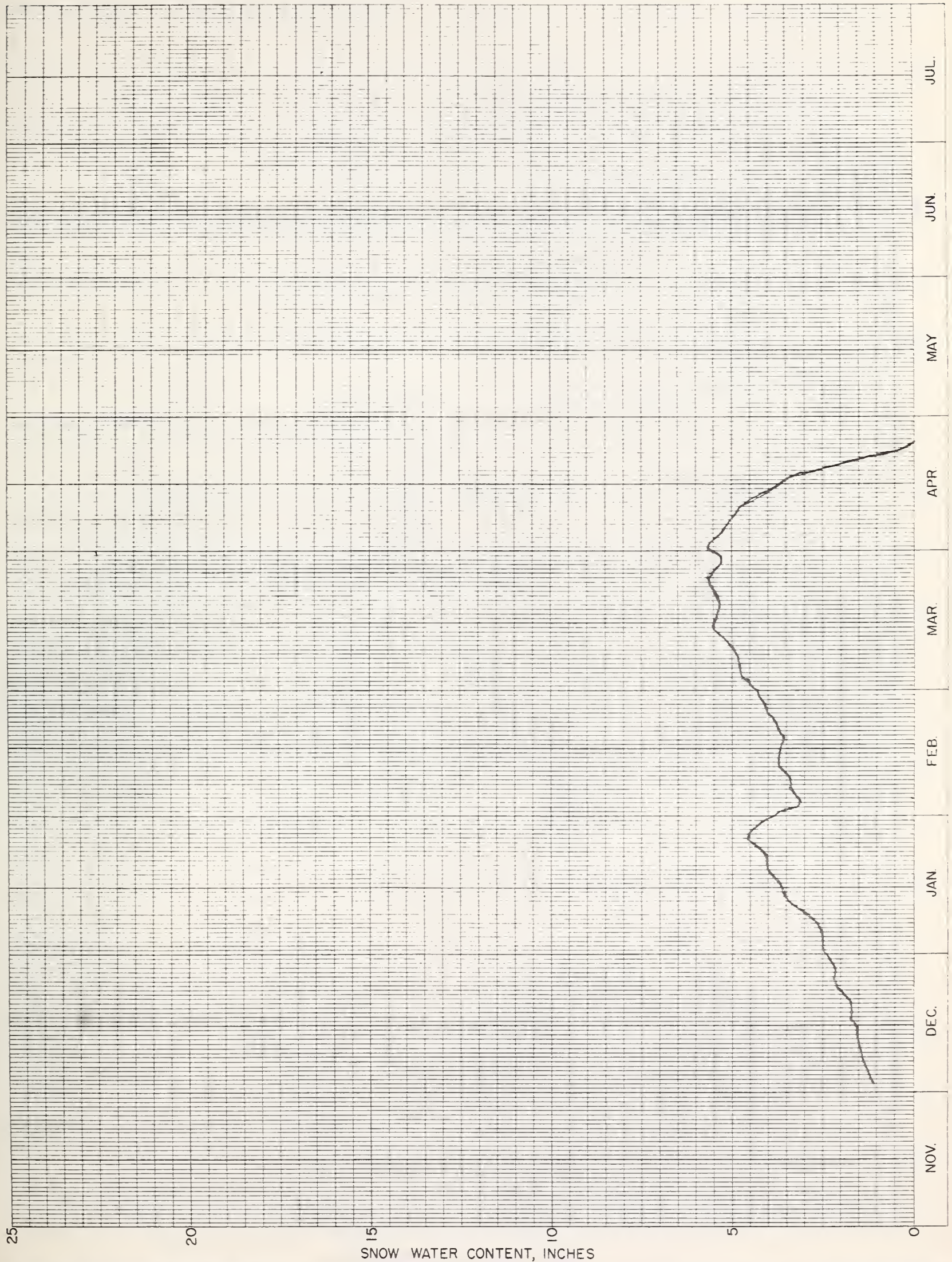
SNOW PILLOW DATA
WATER YEAR 1971

LUBRECHT FLUME

No. 13C38

Elev. 4800

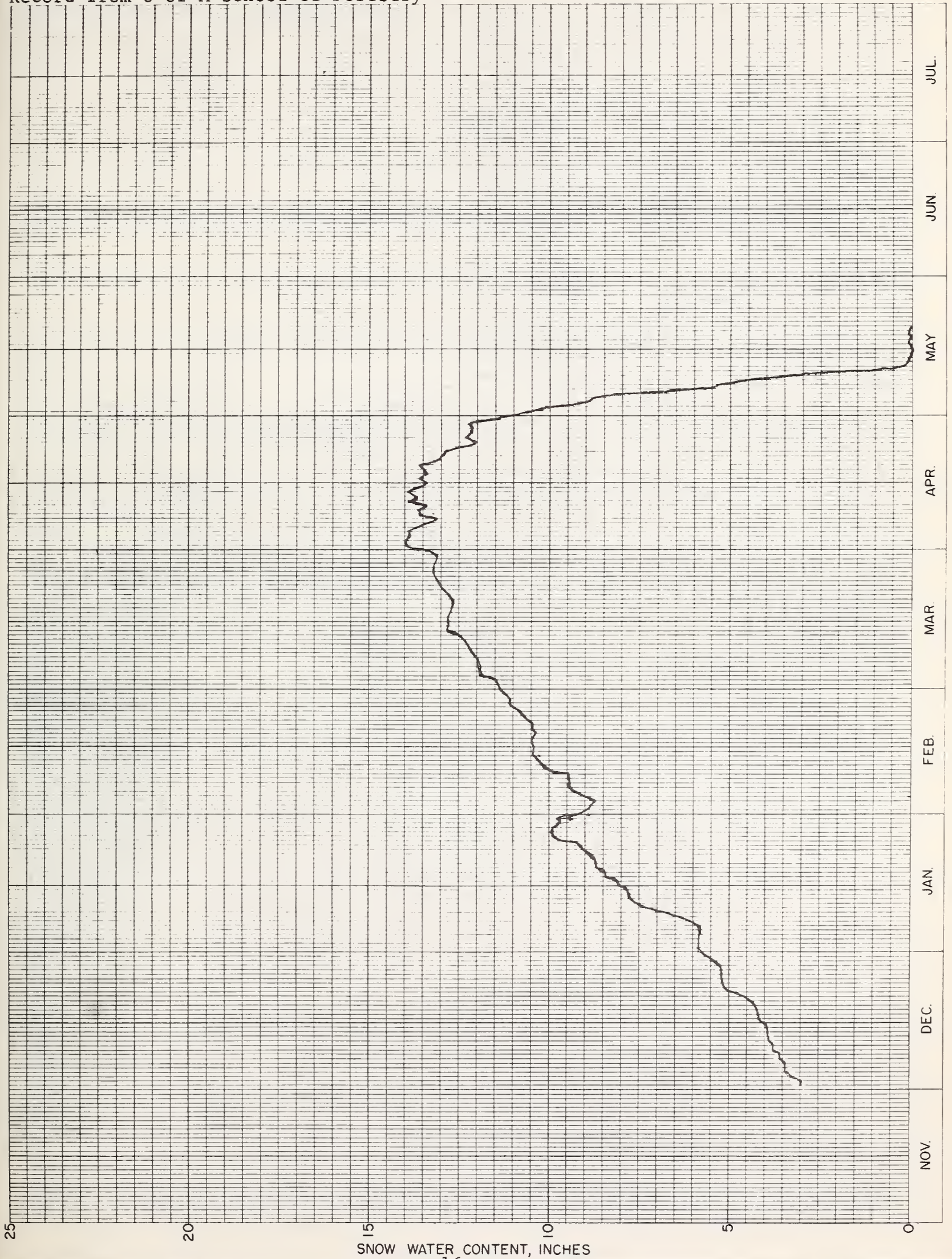
Drainage. Clark Fork



SNOW PILLOW DATA
WATER YEAR 1971

NORTH FORK ELK CREEK

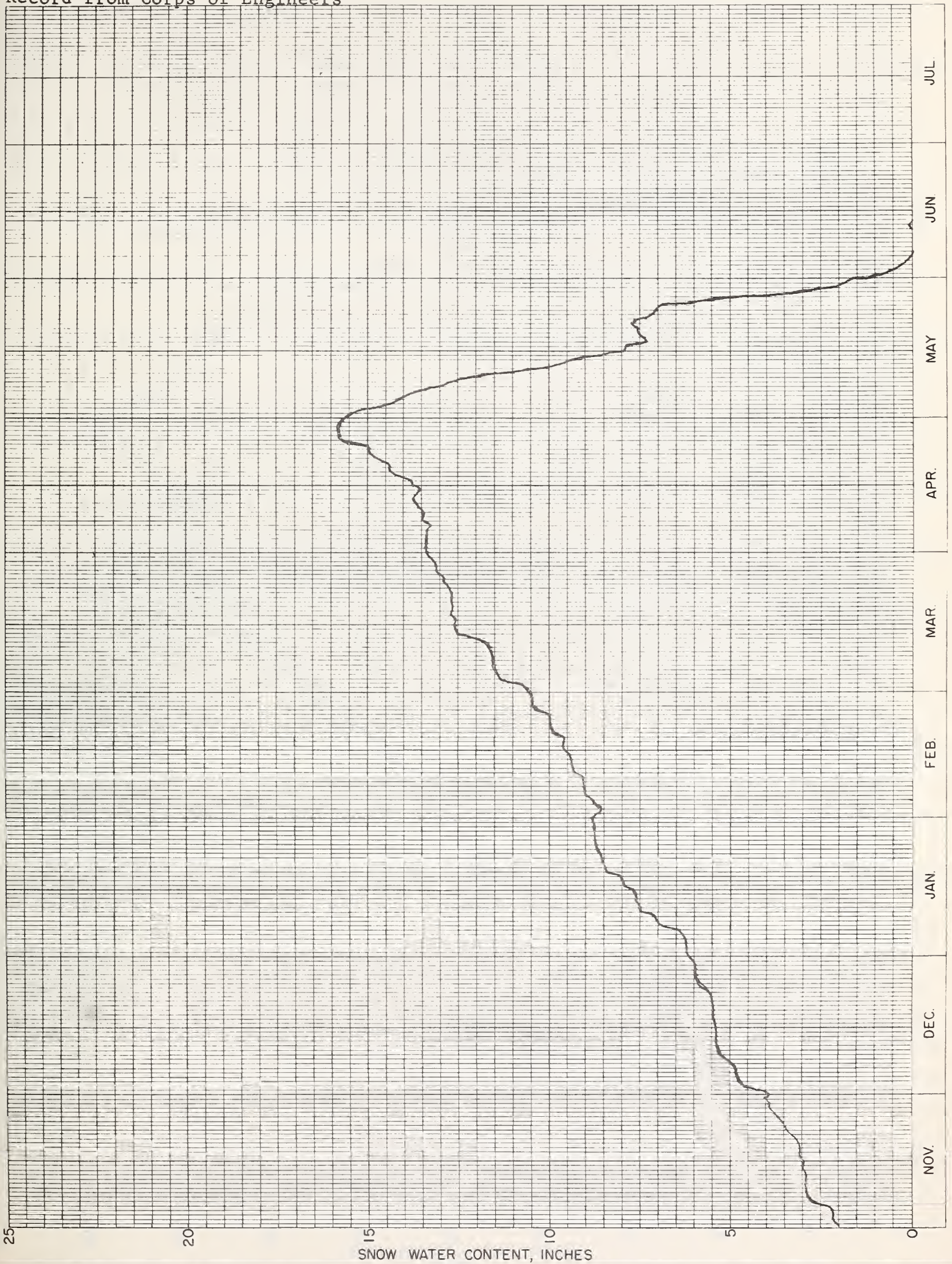
No. 13C31 Elev. 6250 Drainage Clark Fork
Record from U of M School of Forestry



SNOW PILLOW DATA
WATER YEAR 1971

PETERSON MEADOWS

No. 13C36 Elev. 7200 Drainage. Clark Fork
Record from Corps of Engineers



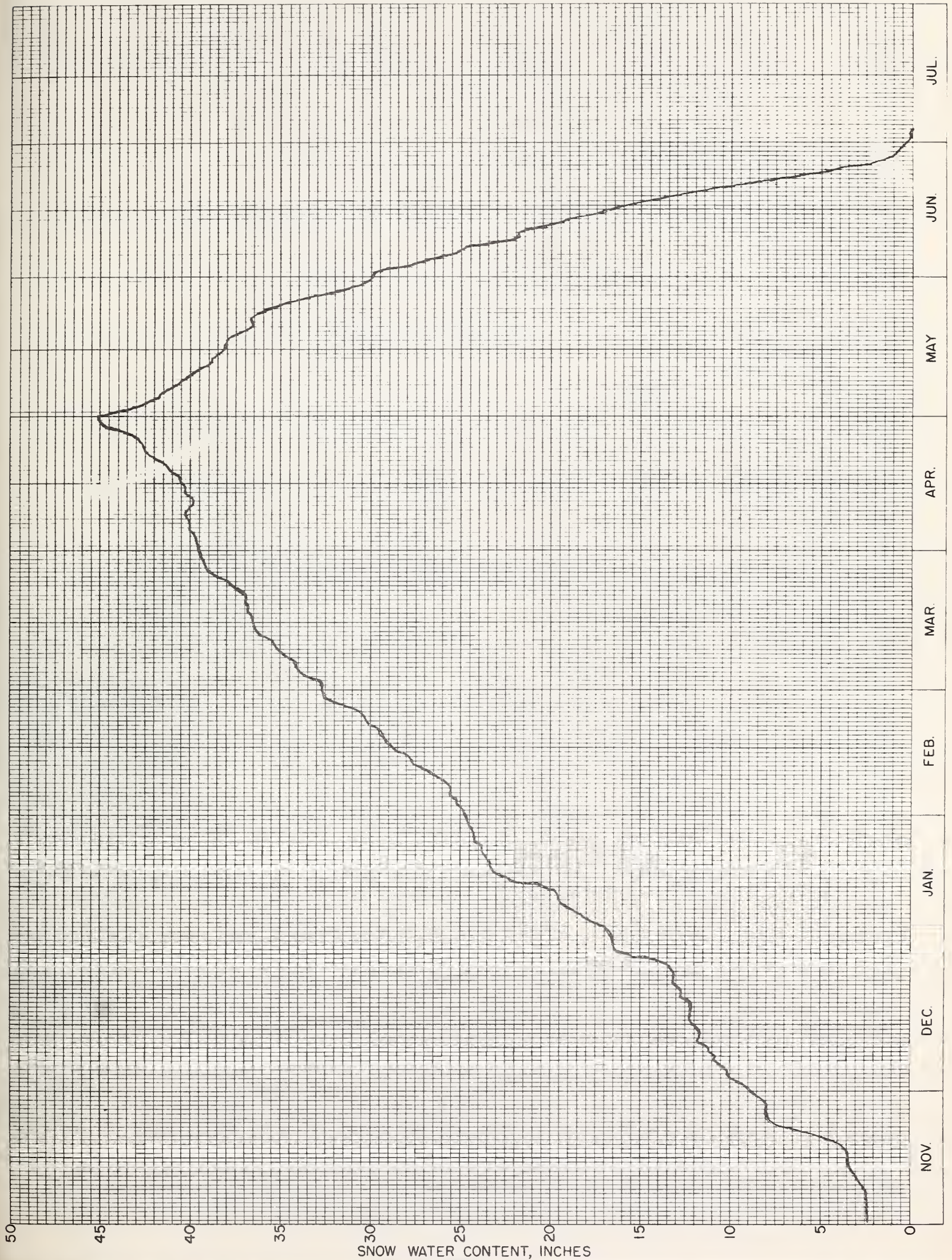
SNOW PILLOW DATA
WATER YEAR 1971

SADDLE MOUNTAIN

No. 13D22

Elev. 7900

Drainage: Bitterroot

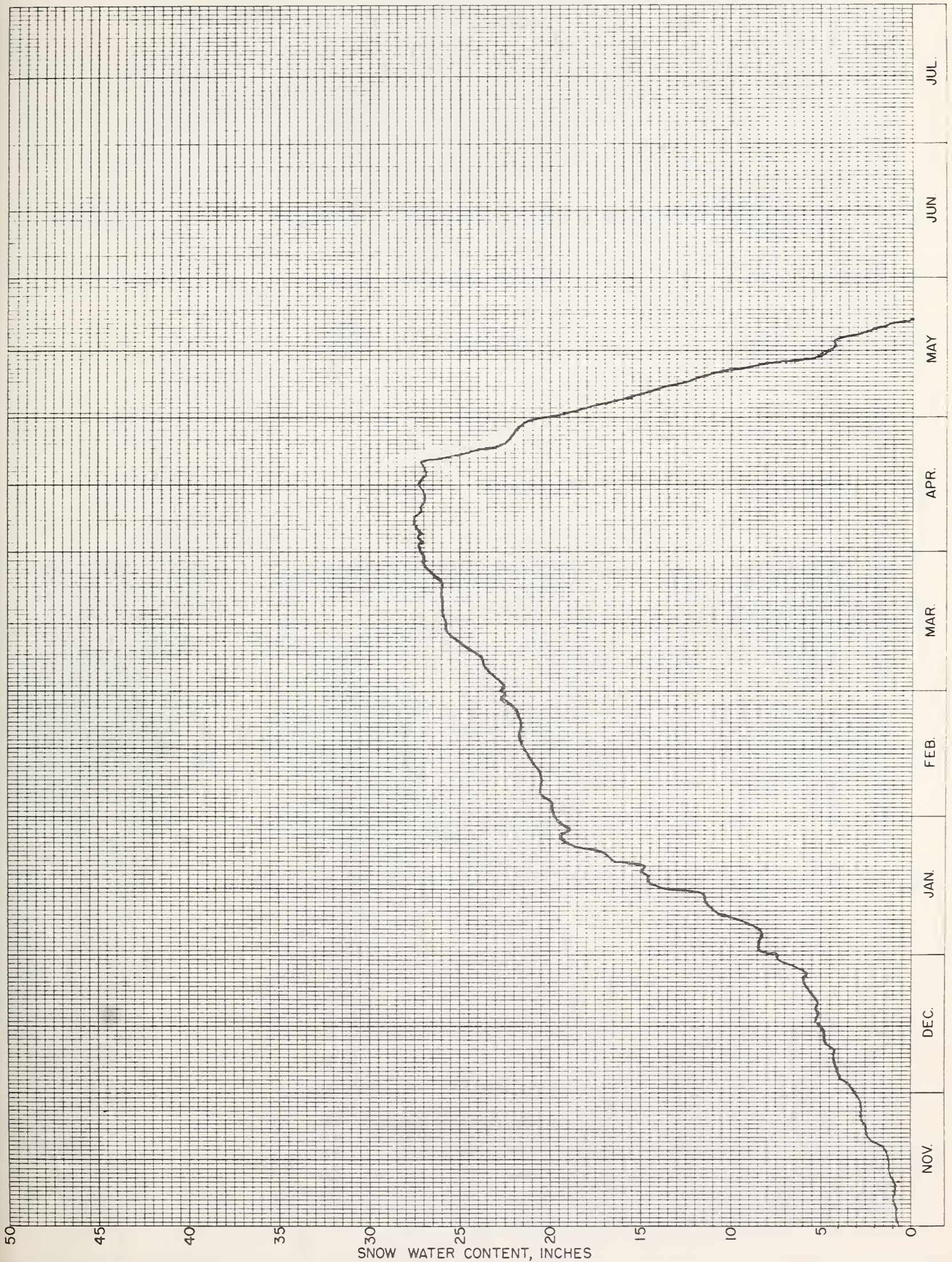




SNOW PILLOW DATA
WATER YEAR 1971

TWELVEMILE CREEK

No. 14C13 Elev. 5600 Drainage: Bitterroot



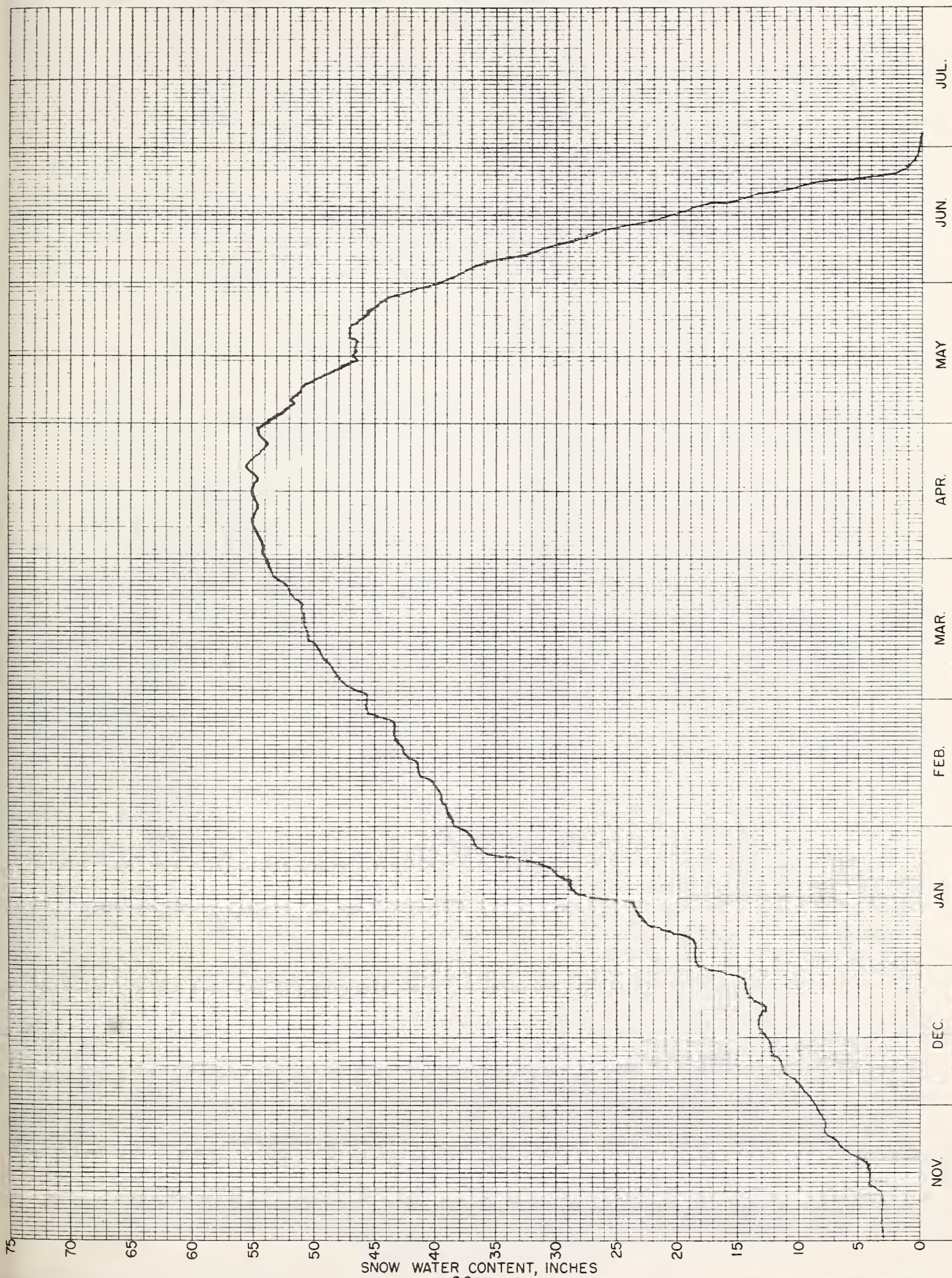
SNOW PILLOW DATA
WATER YEAR 1971

TWIN LAKES

No. 14C12

Elev. 6400

Drainage: Bitterroot



SNOW PILLOW DATA
WATER YEAR 1971

ROCKER PEAK

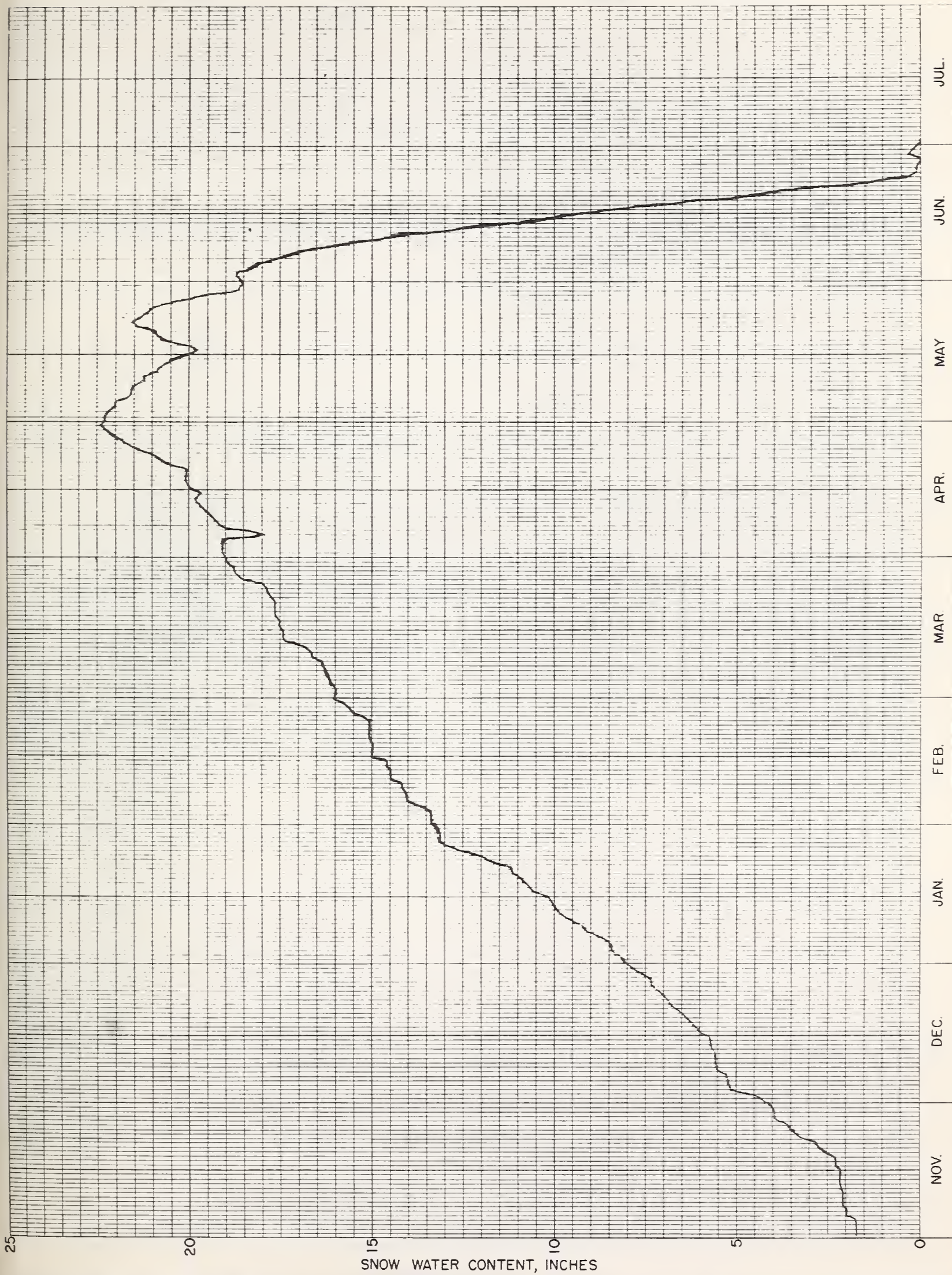
No. 12C11

Elev.

8000

Drainage.

Jefferson



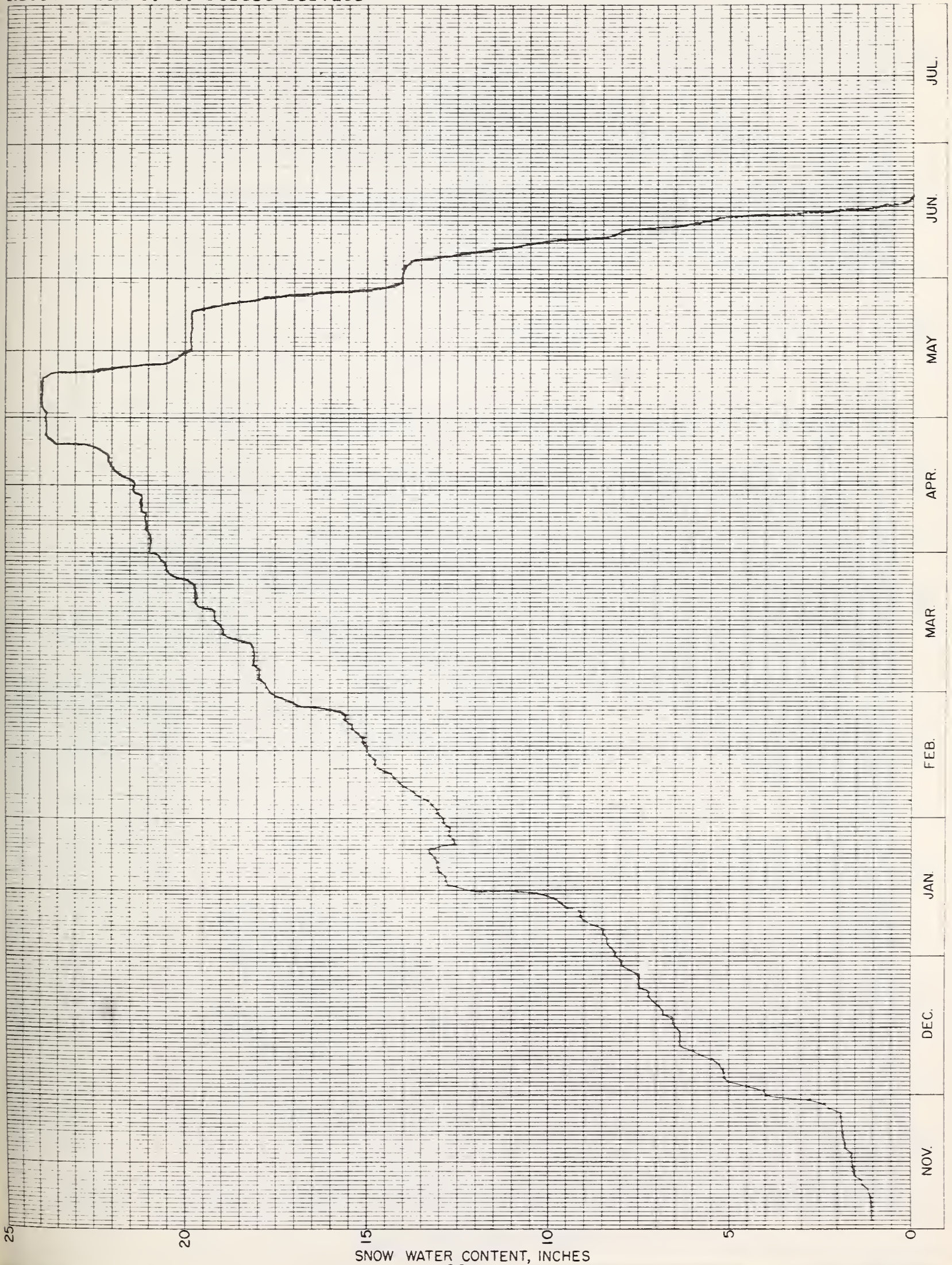
SNOW PILLOW DATA
WATER YEAR 1971

LION MOUNTAIN

No. 11E28
Record from U. S. Forest Service

Elev. 8760

Drainage Madison



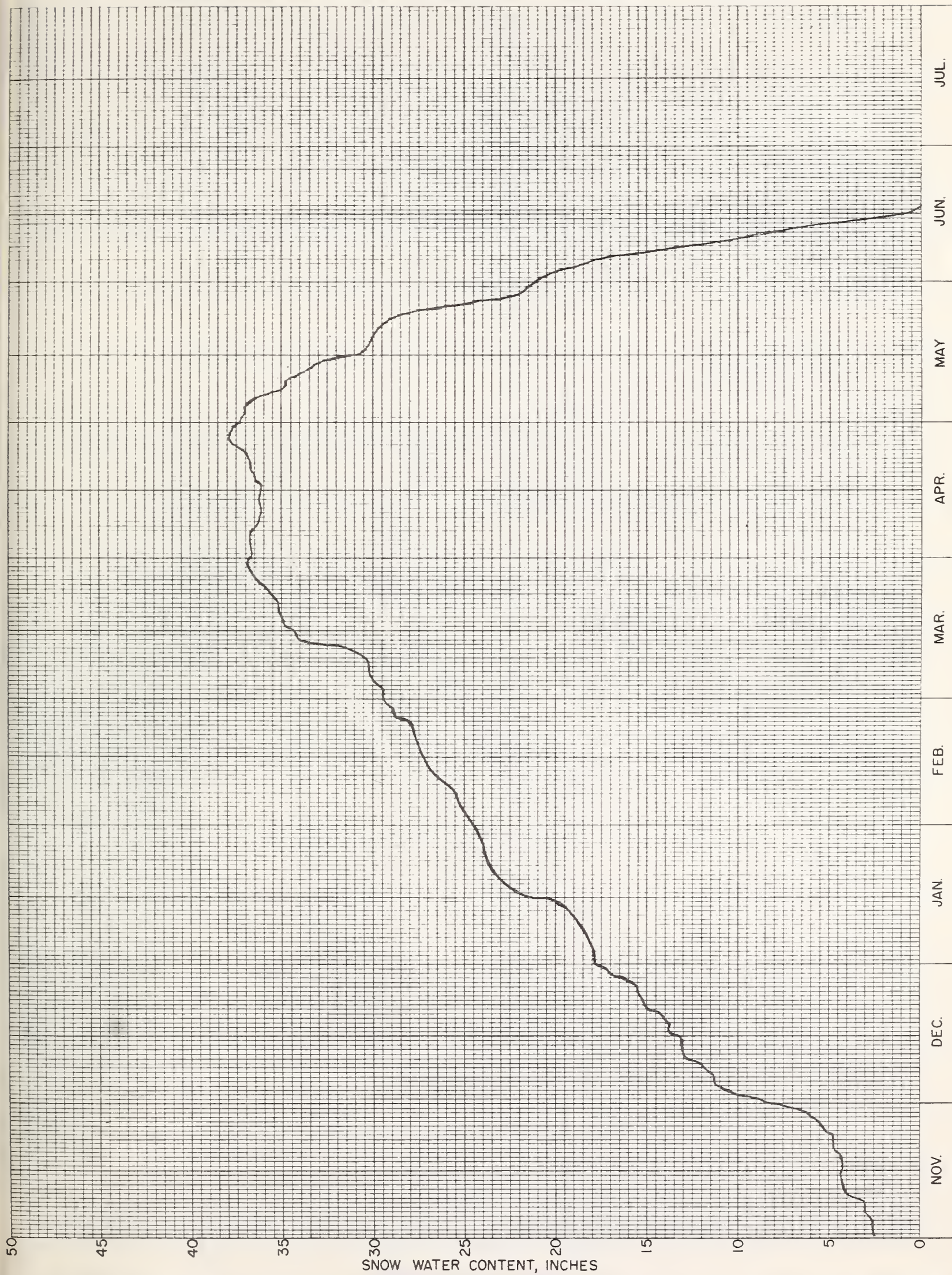
SNOW PILLOW DATA
WATER YEAR 1971

MADISON PLATEAU

No. 11E31

Elev. 7750

Drainage: Madison

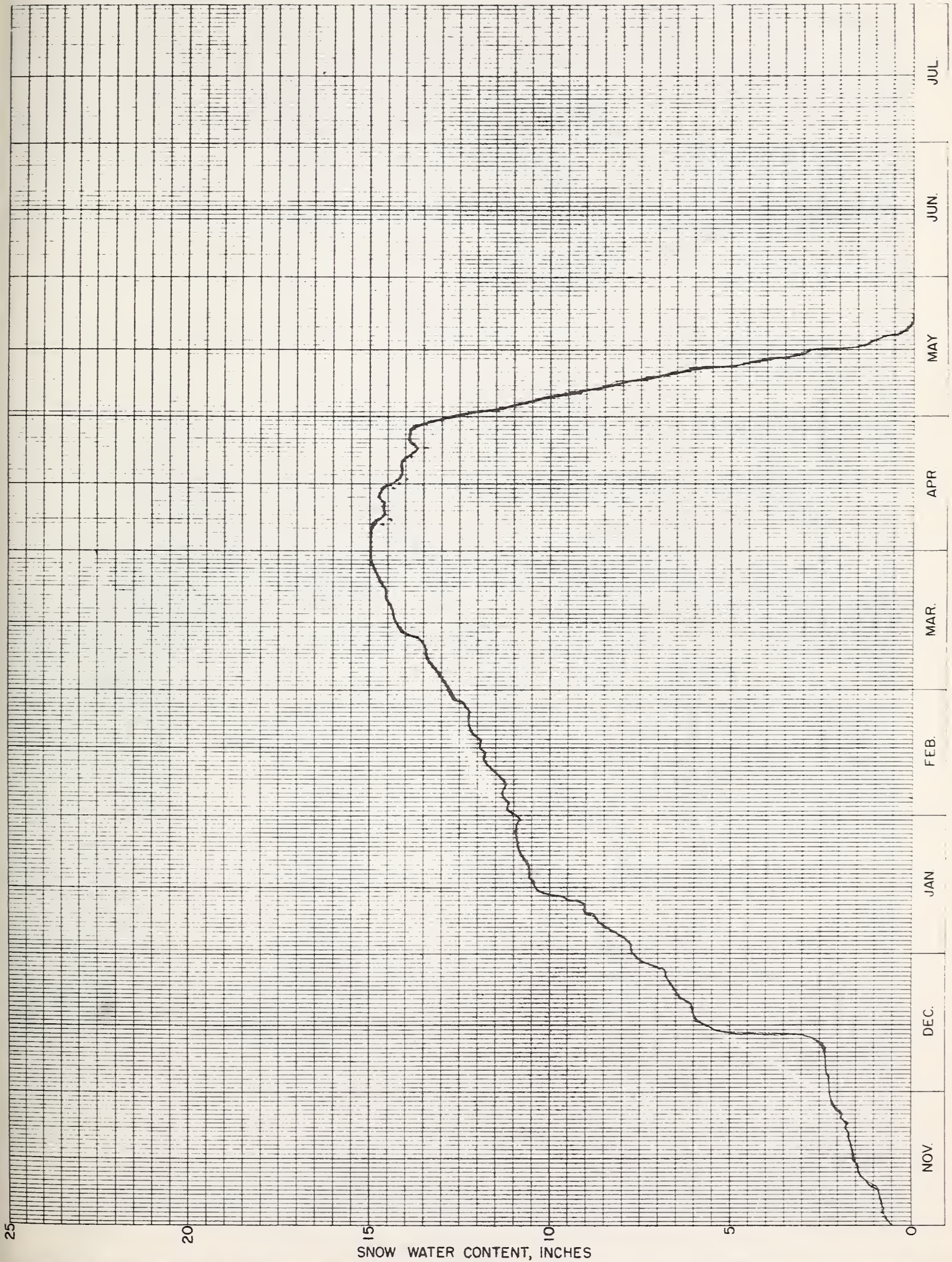




SNOW PILLOW DATA
WATER YEAR 1971

WEST YELLOWSTONE

No. 11E07 Elev. 6700 Drainage Madison

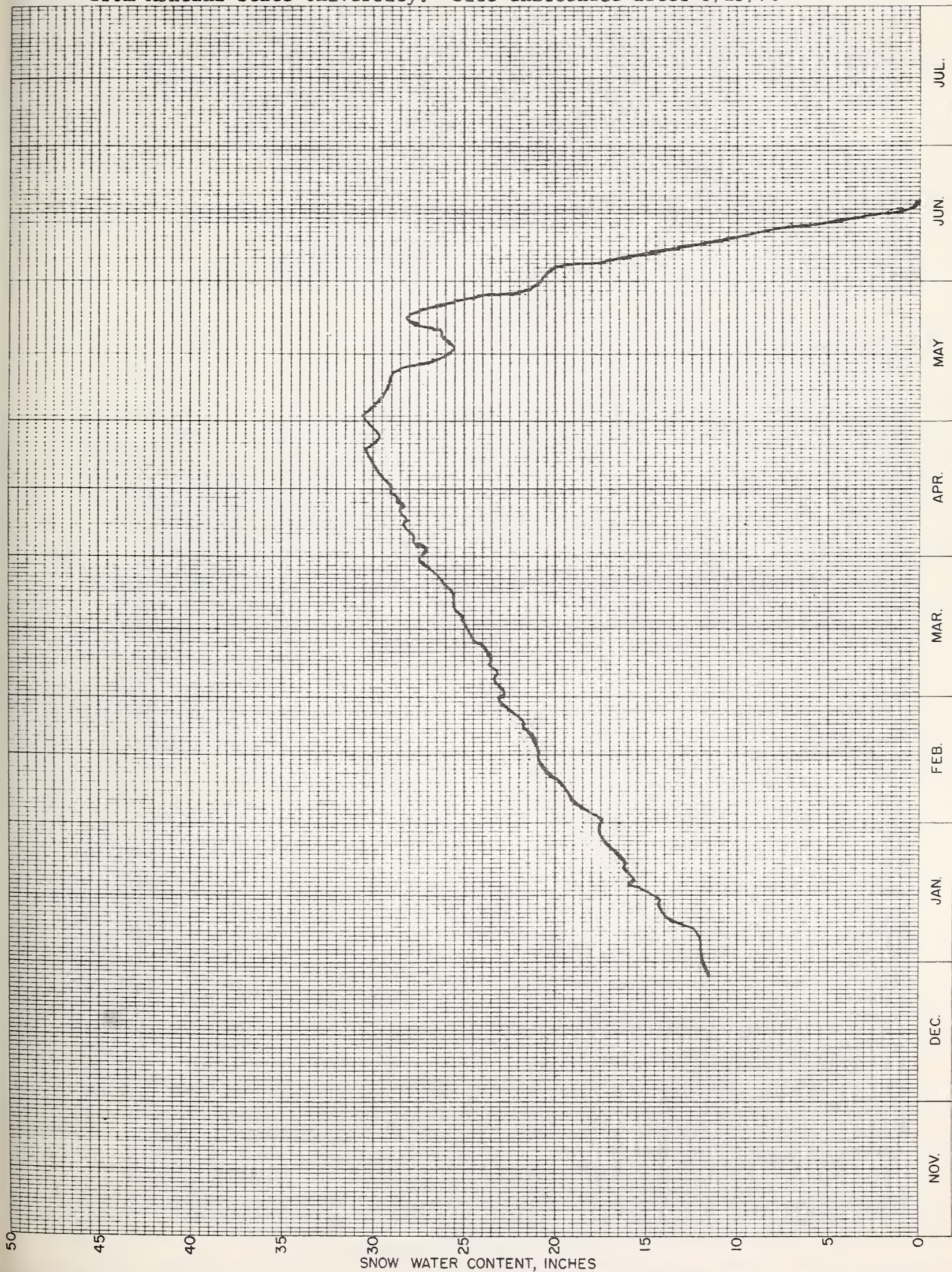




SNOW PILLOW DATA
WATER YEAR 1971

BANGTAIL

Record No. 10D20 Elev. 7900 Drainage: Gallatin
from Montana State University. Site unattended after 3/25/70



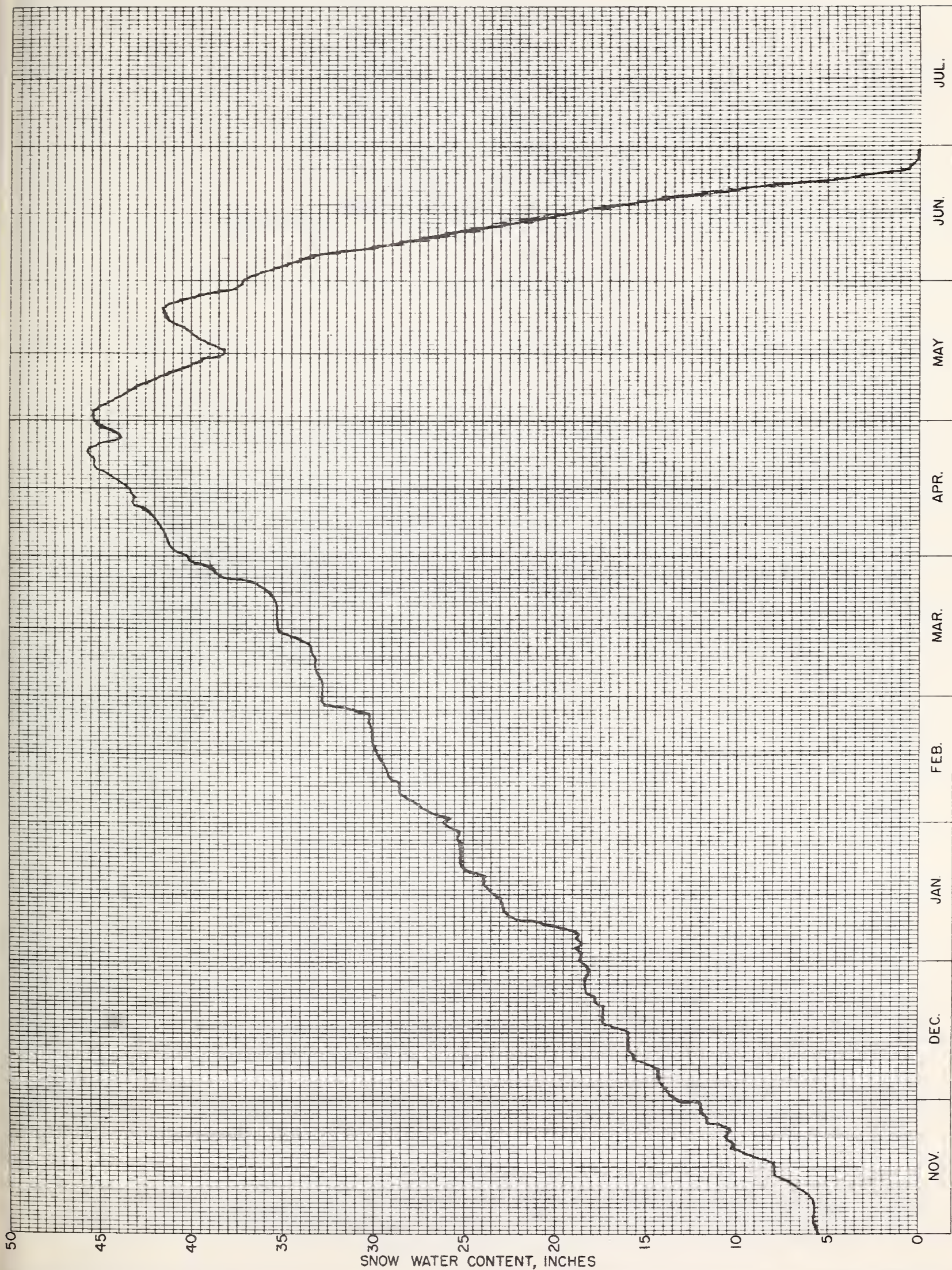
SNOW PILLOW DATA
WATER YEAR 1971

BRIDGER BOWL

No. 10D15

Elev. 7250

Drainage: Gallatin



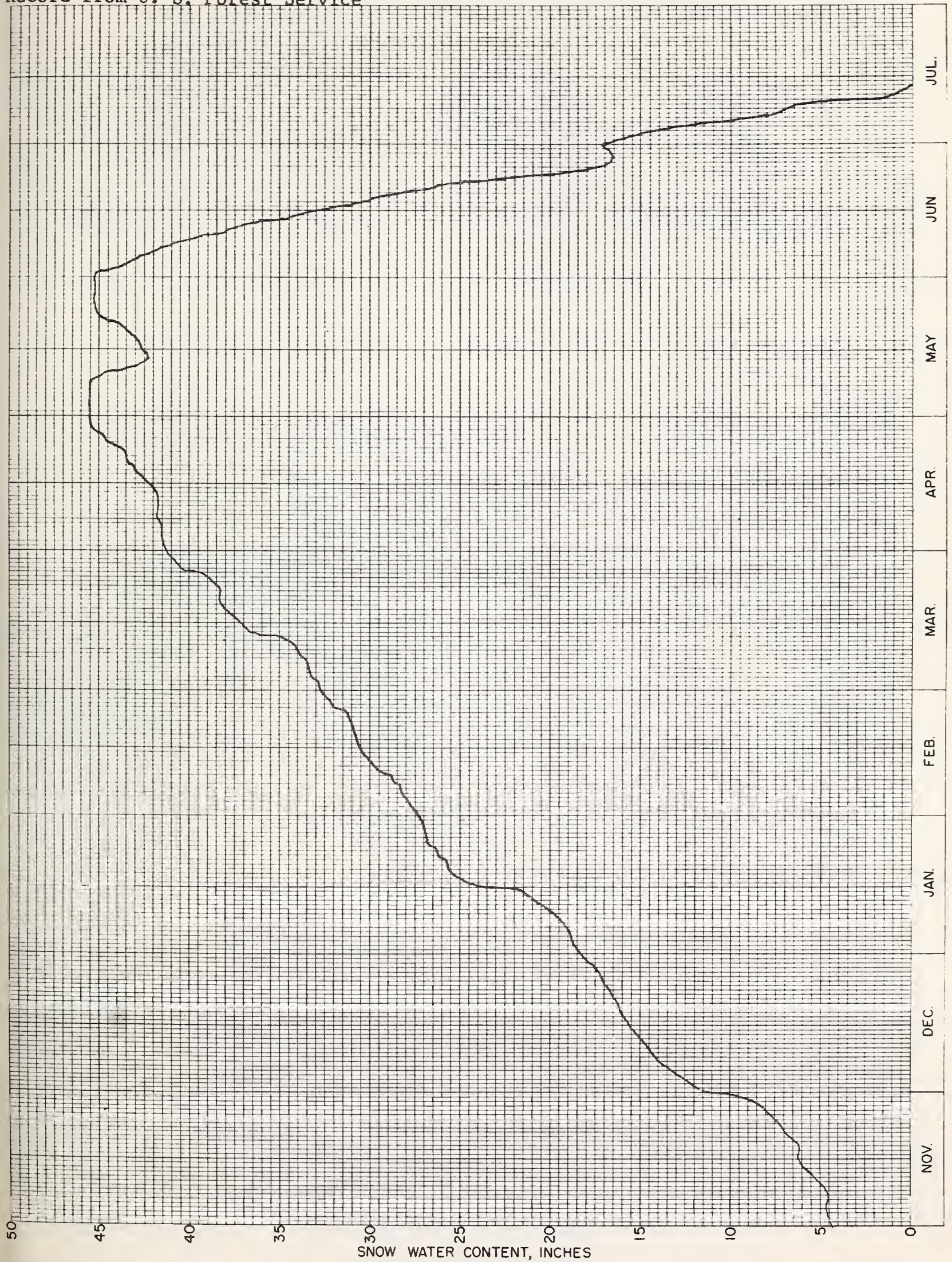
SNOW PILLOW DATA
WATER YEAR 1971

CARROT BASIN

No. 11E29
Record from U. S. Forest Service

Elev. 9000

Drainage: Gallatin





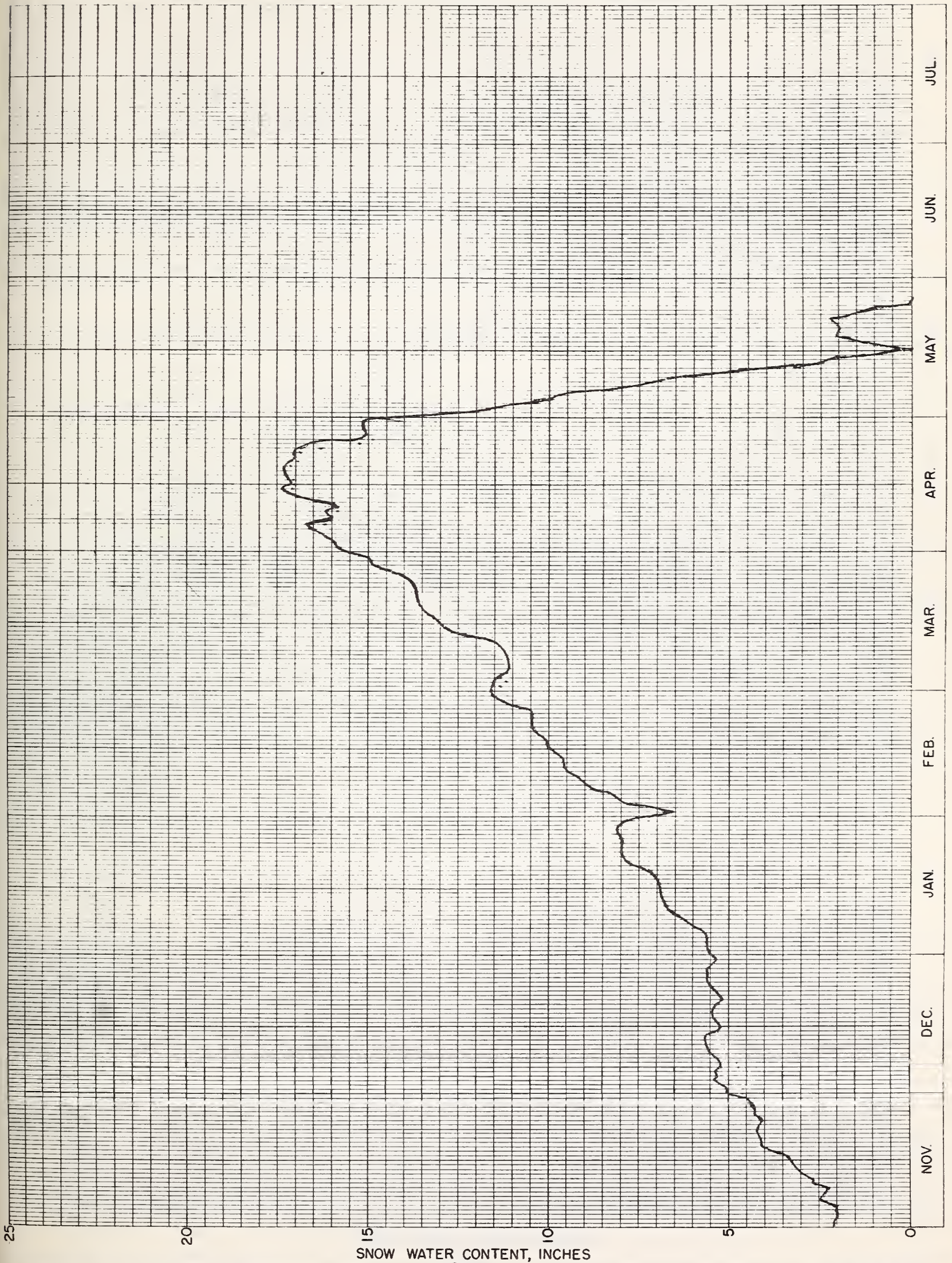
SNOW PILLOW DATA
WATER YEAR 1971

LICK CREEK

No. 10D13

Elev. 6860

Drainage. Gallatin



SNOW WATER CONTENT, INCHES

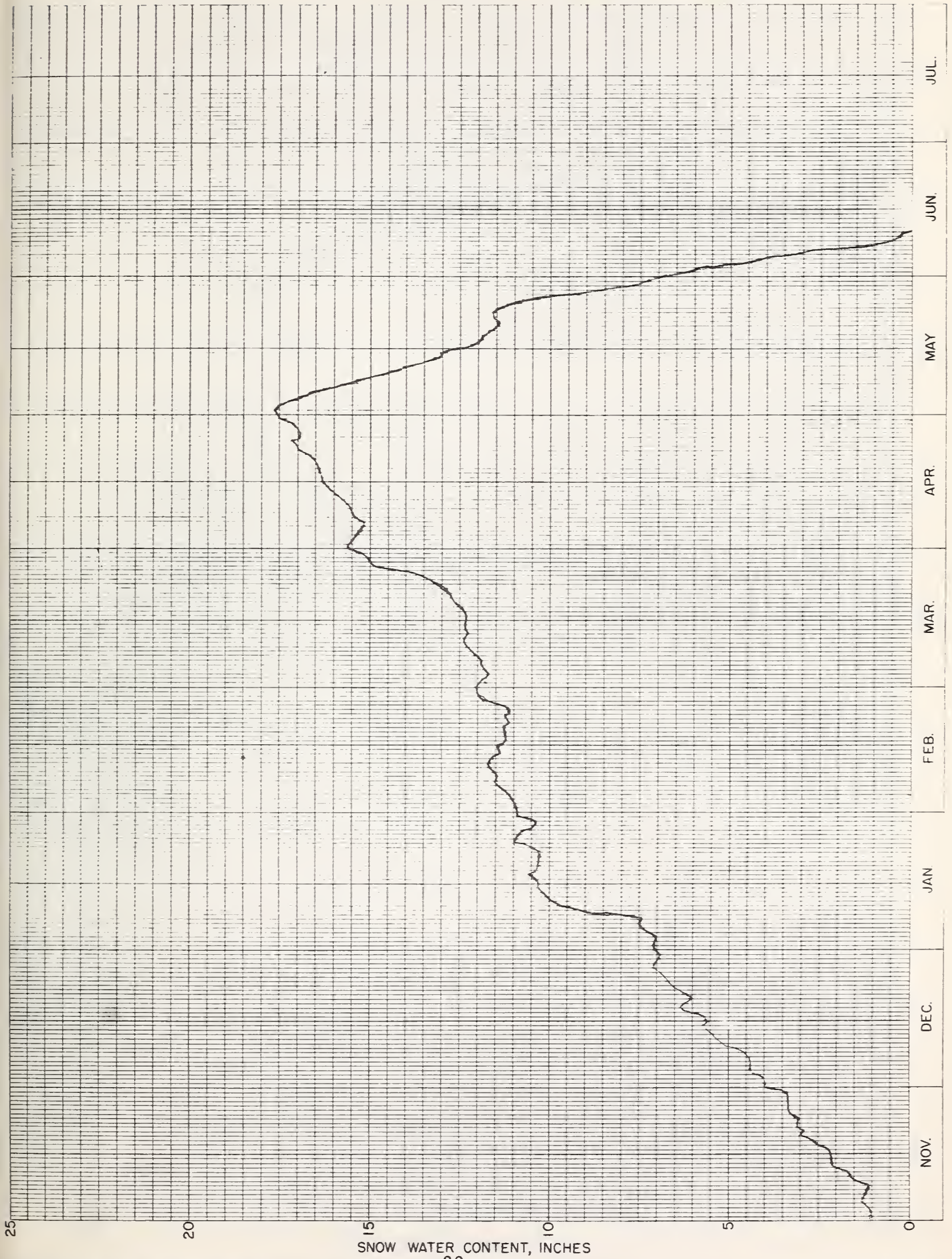
SNOW PILLOW DATA
WATER YEAR 1971

MAYNARD CREEK

No. 10D18

Elev. 6210

Drainage. Gallatin





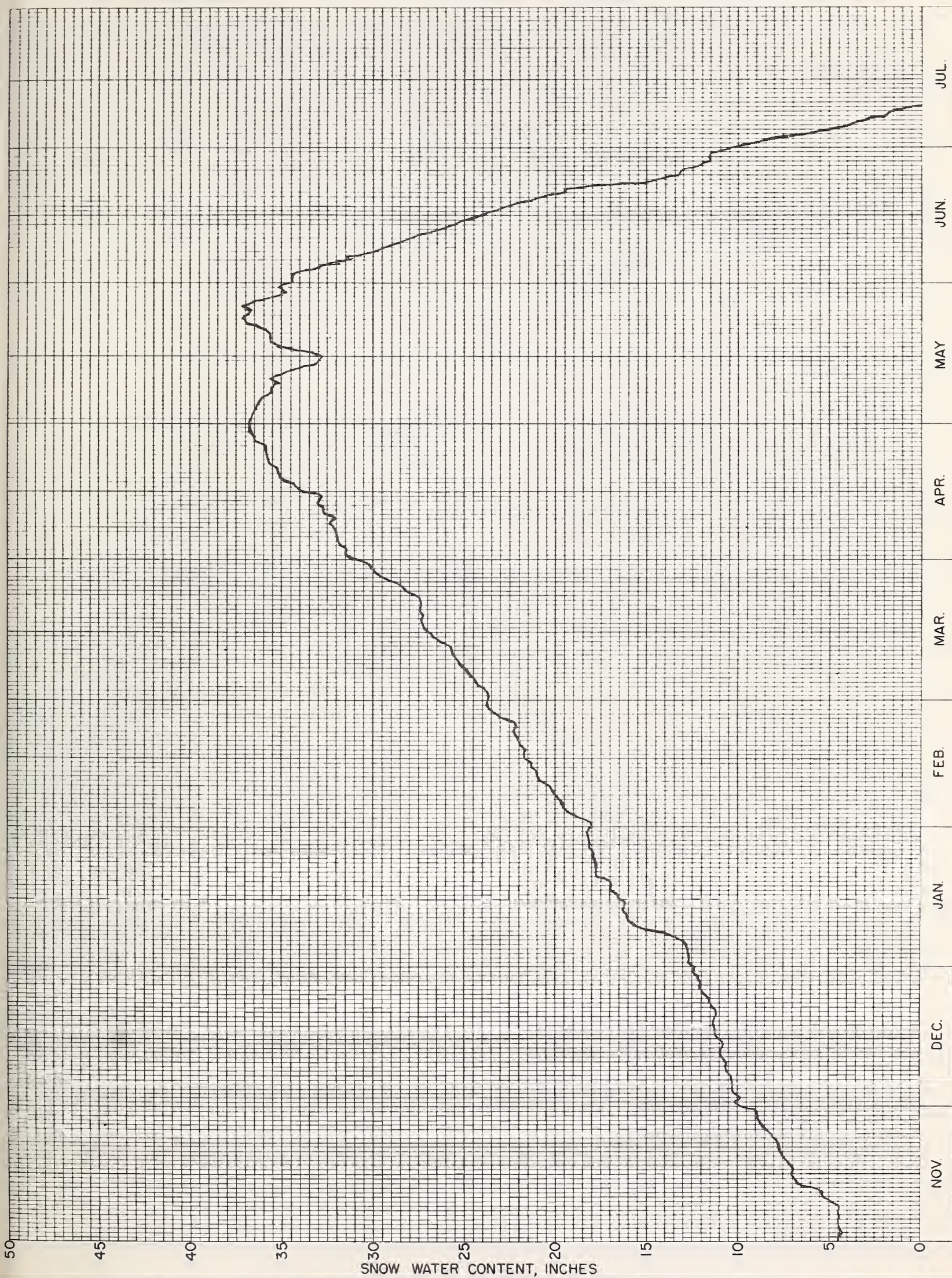
SNOW PILLOW DATA
WATER YEAR 1971

SHOWER FALLS

No 10D16

Elev. 8100

Drainage: Gallatin





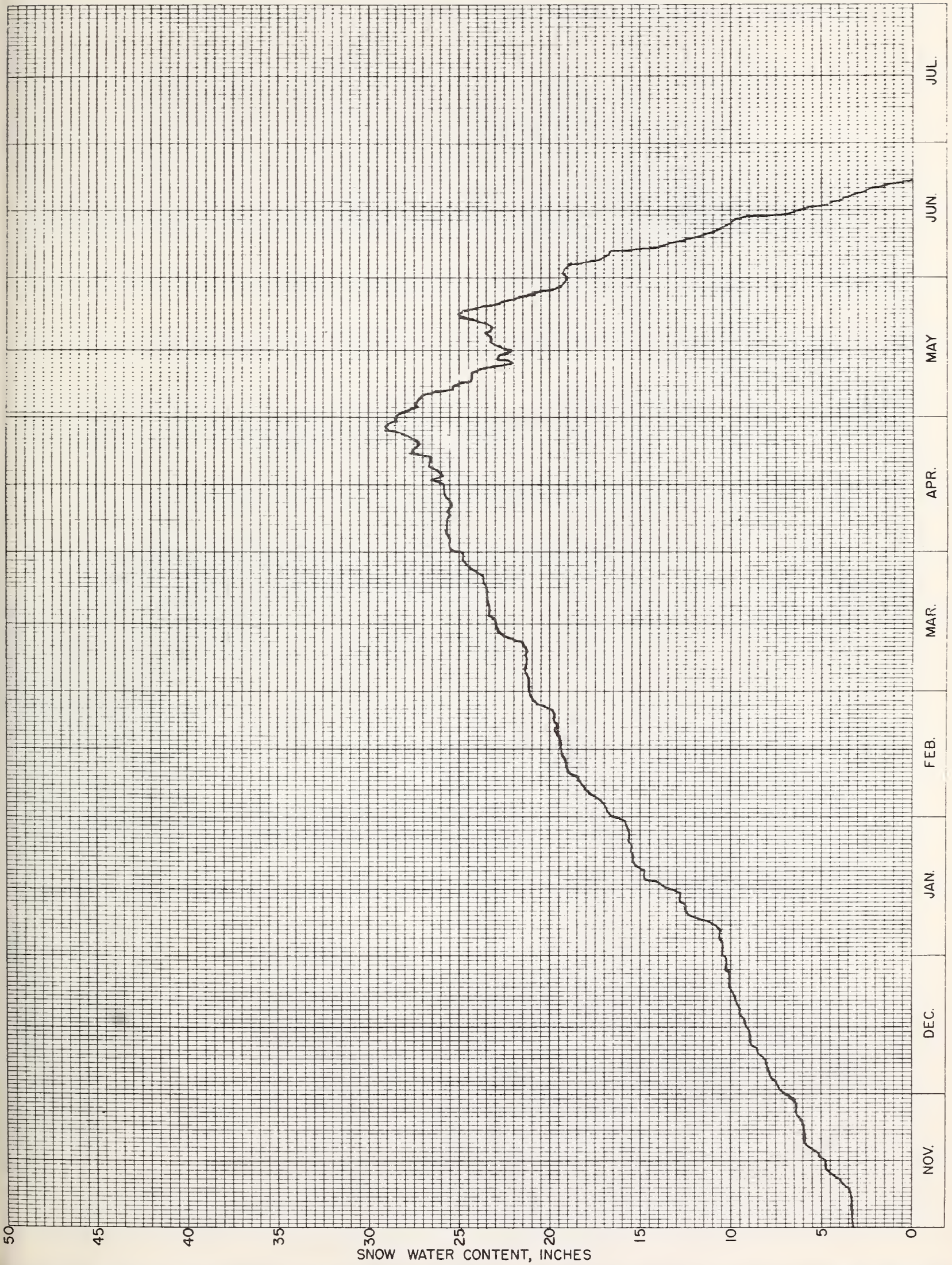
SNOW PILLOW DATA
WATER YEAR 1971

TAYLOR PEAKS

No. 11D13

Elev. 8500

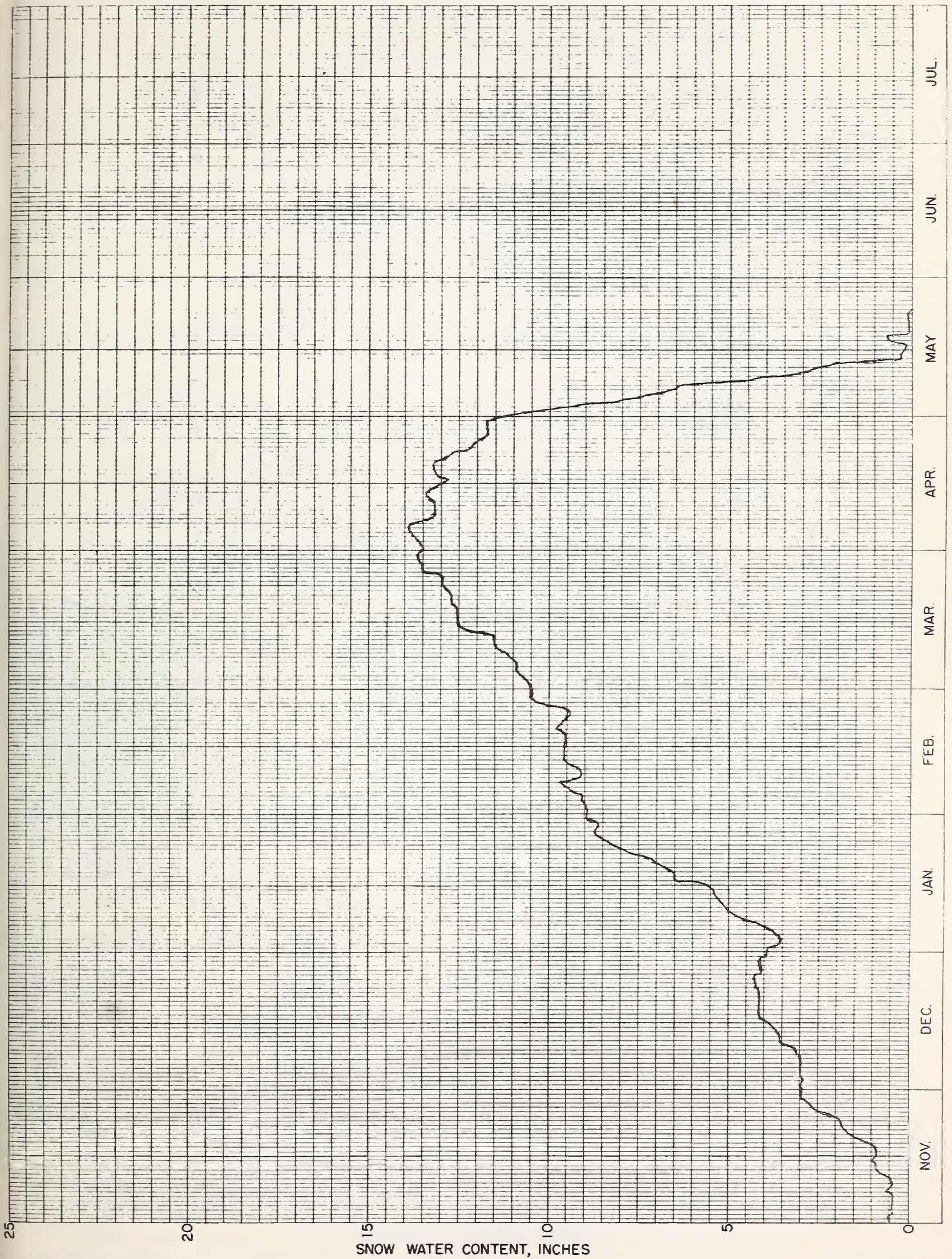
Drainage: Gallatin



SNOW PILLOW DATA
WATER YEAR 1971

DEADMAN CREEK

No. 10C09 Elev. 6450 Drainage. Missouri Main Stem



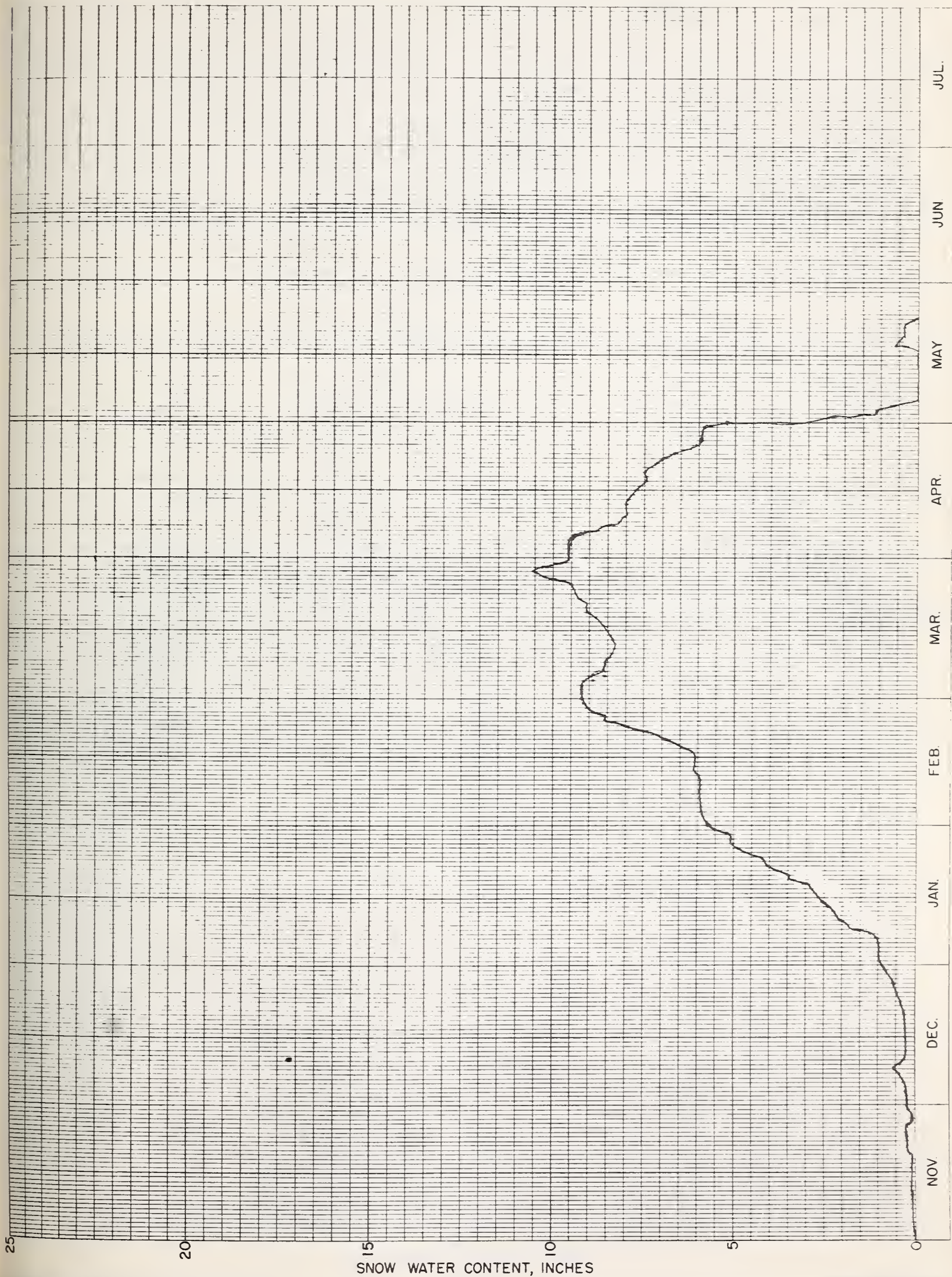
SNOW PILLOW DATA
WATER YEAR 1971

ROCKY BOY

No. 9A01

Elev. 4700

Drainage. Milk



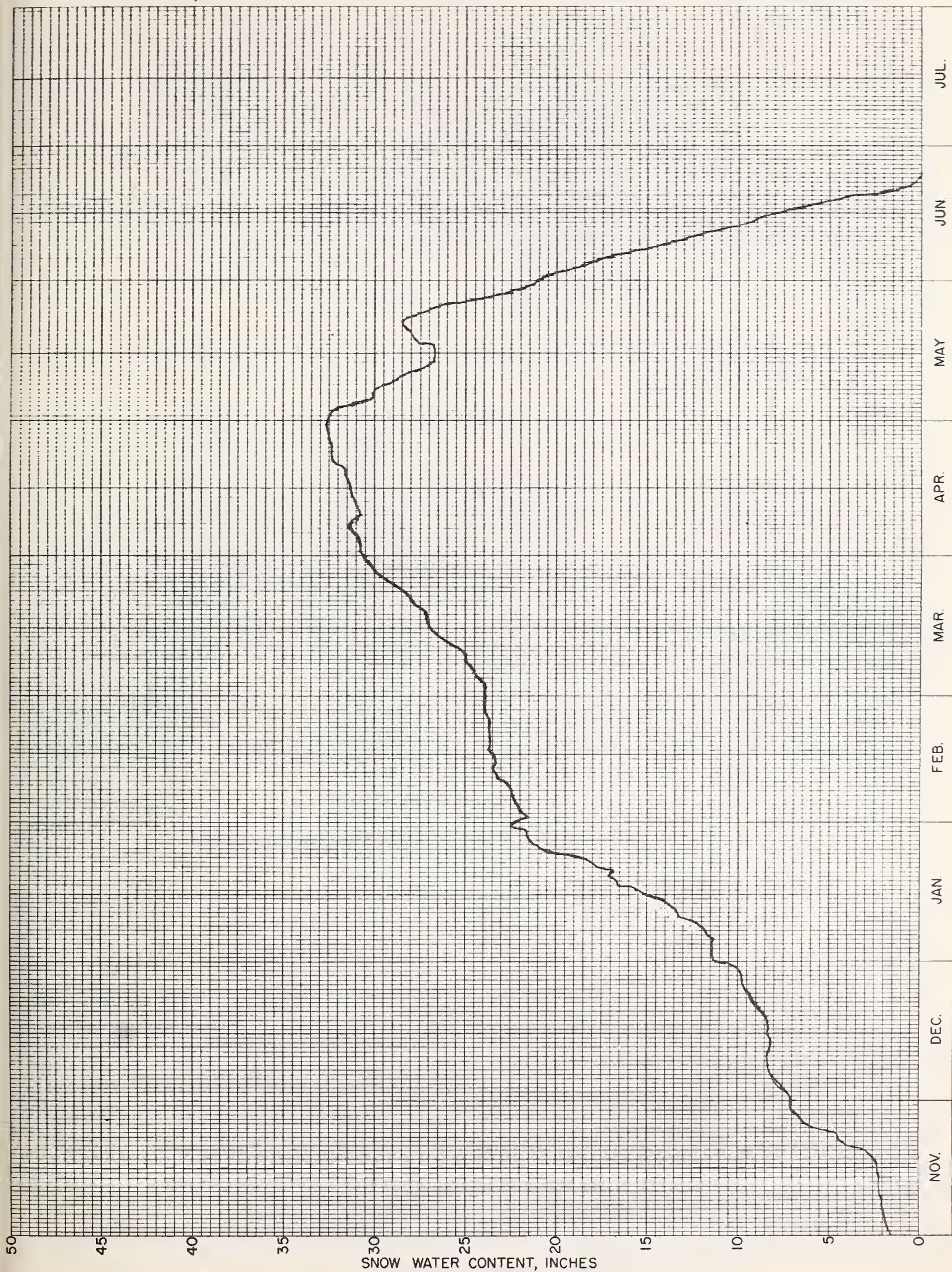
SNOW PILLOW DATA
WATER YEAR 1971

MOUNT LOCKHART

No. 12B12

Elev. 6400

Drainage: Sun-Teton-Marias



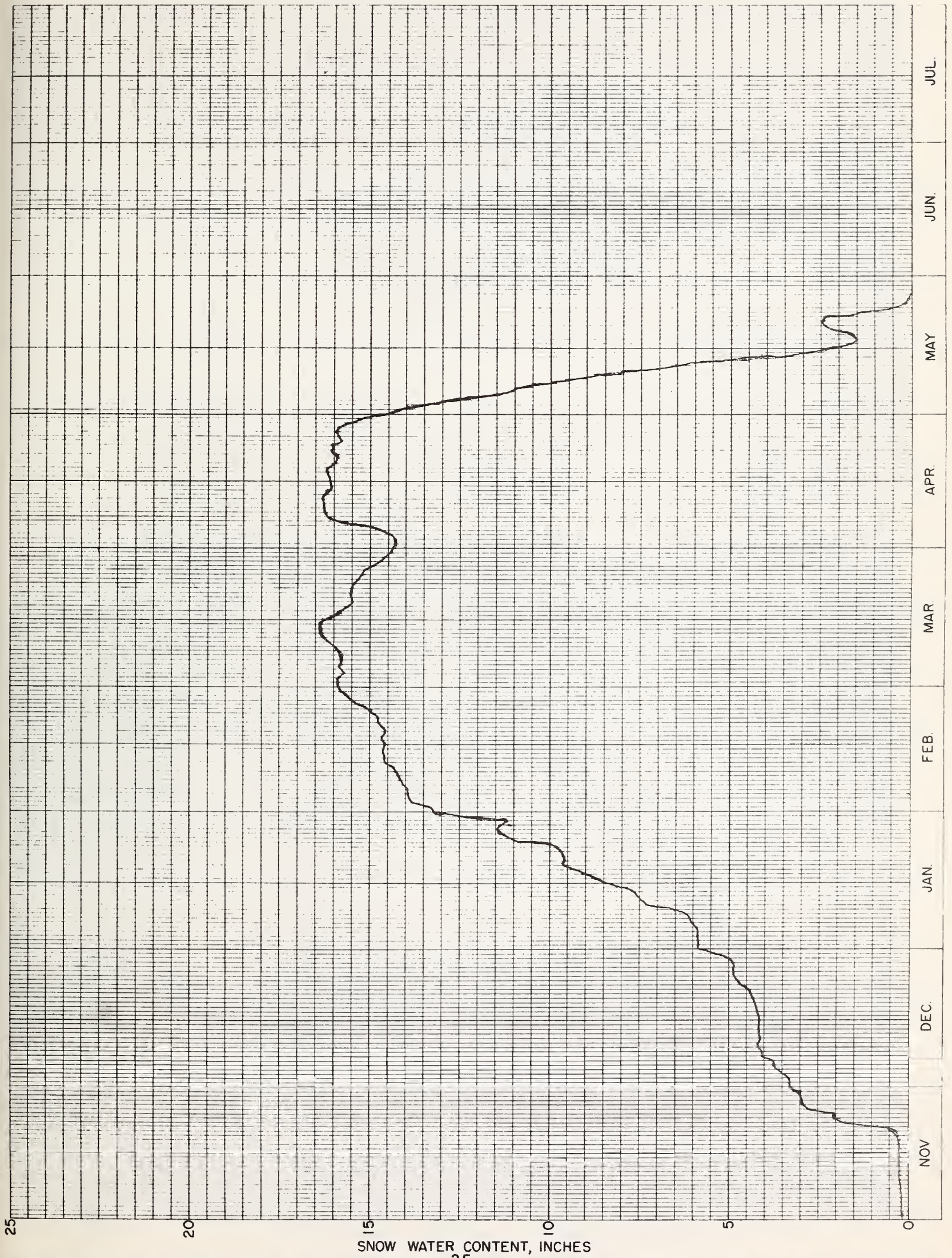
SNOW PILLOW DATA
WATER YEAR 1971

WALDRON

No. 12B13

Elev. 5600

Drainage. Sun-Teton-Marias



SNOW PILLOW DATA
WATER YEAR 1971

SPUR PARK

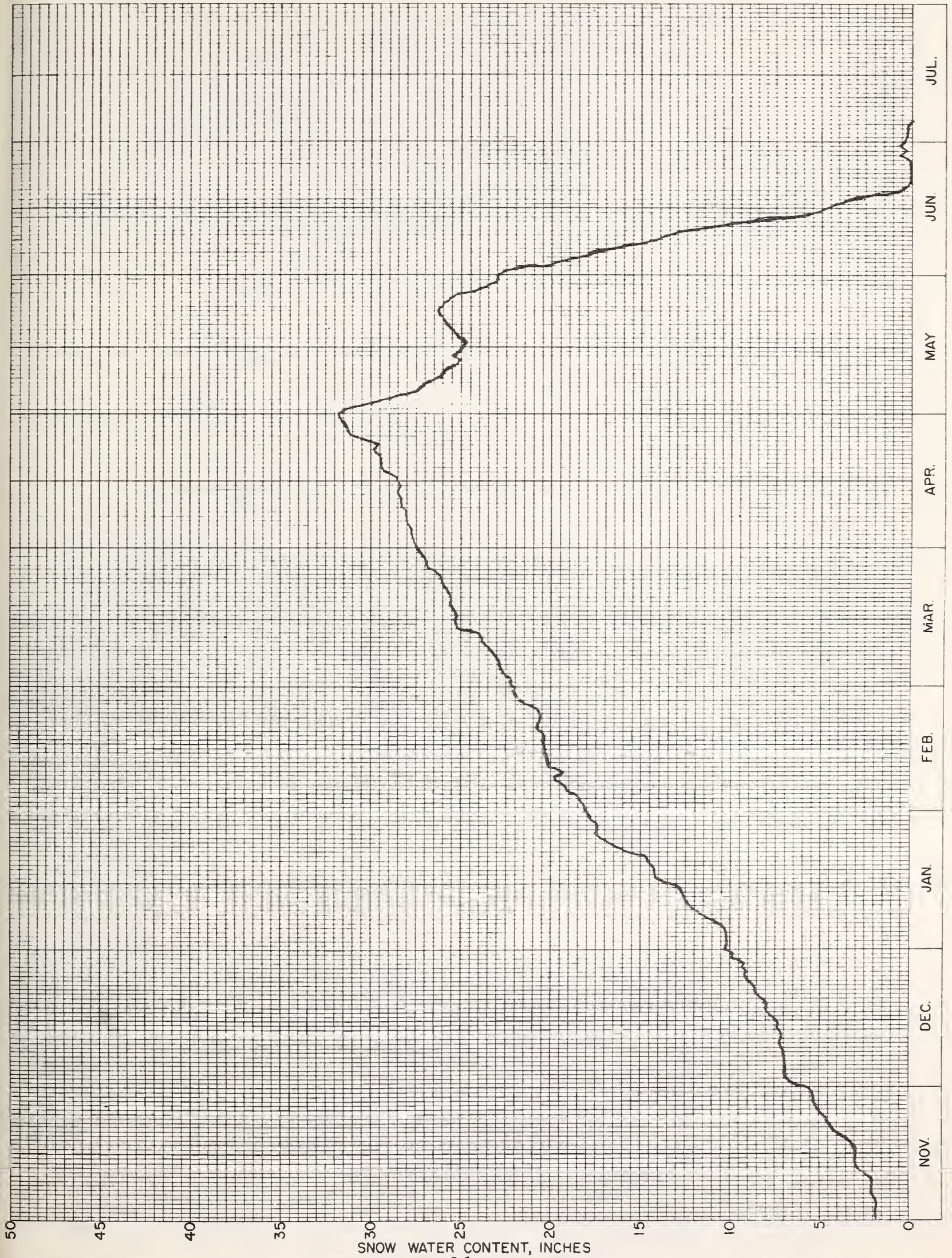
No. 10C06

Elev.

8000

Drainage:

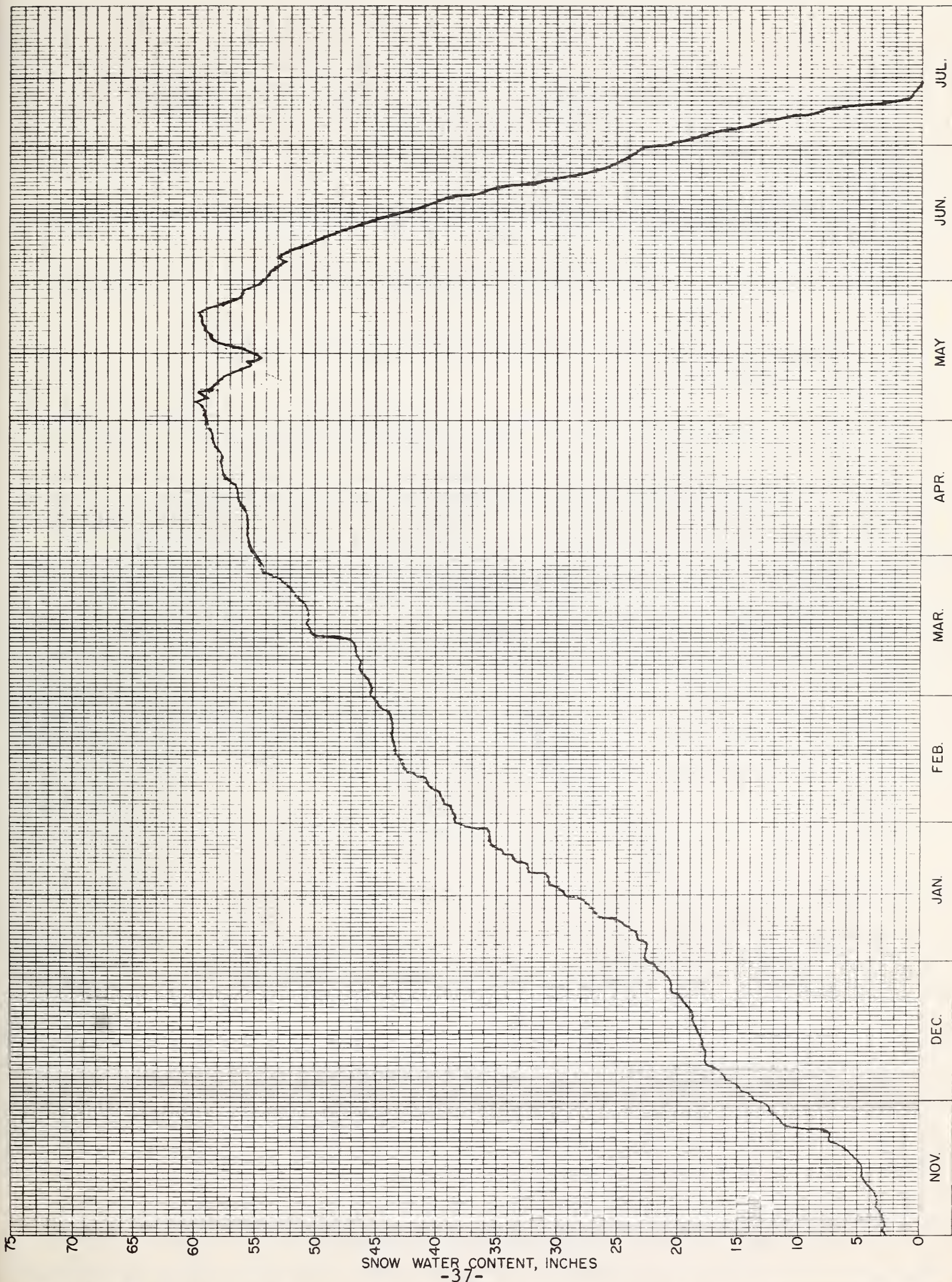
Judith



SNOW PILLOW DATA
WATER YEAR 1971

FISHER CREEK

No. 9D06 Elev. 9100 Drainage: Yellowstone



SNOW PILLOW DATA
WATER YEAR 1971

NORTHEAST ENTRANCE

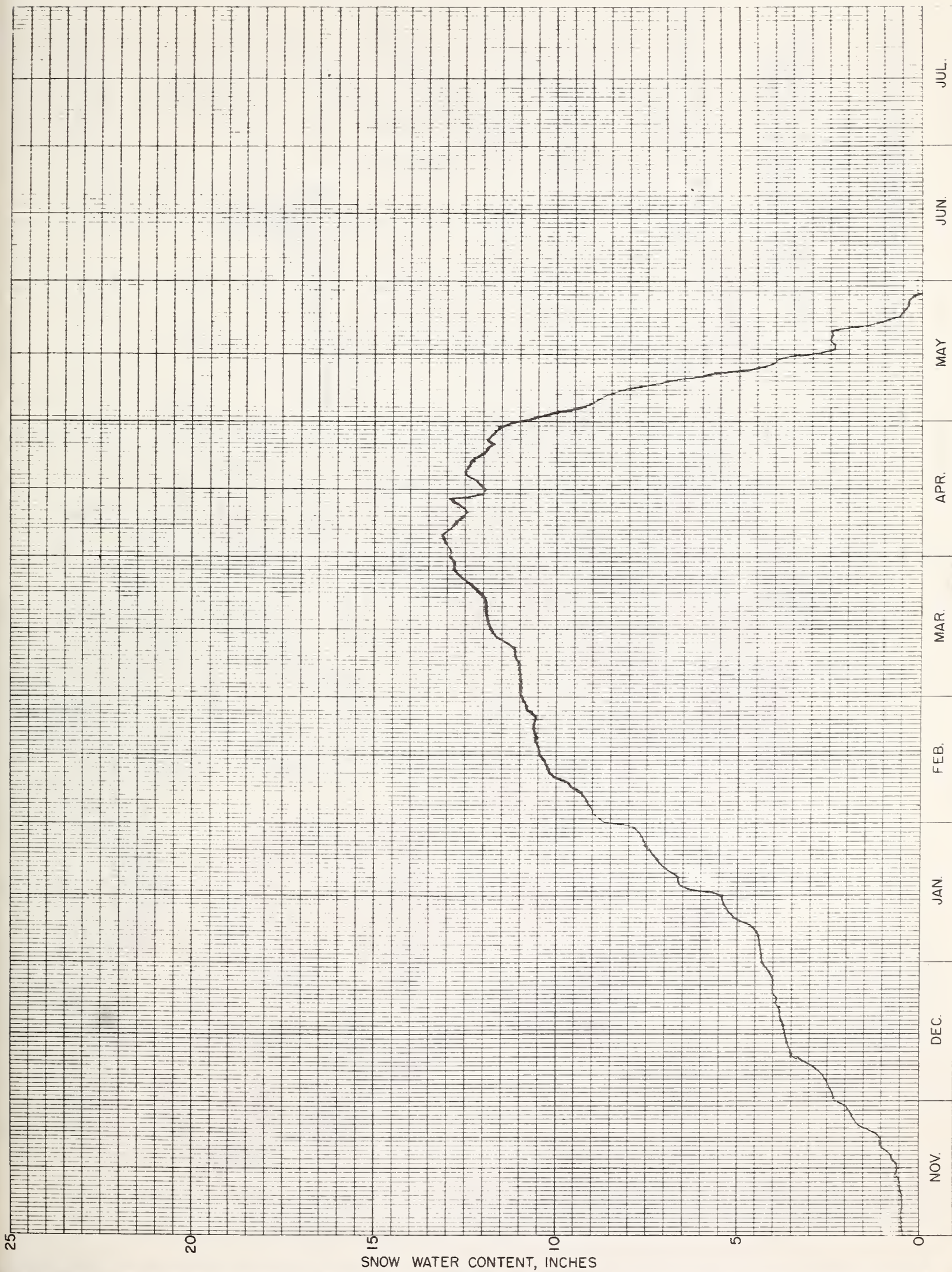
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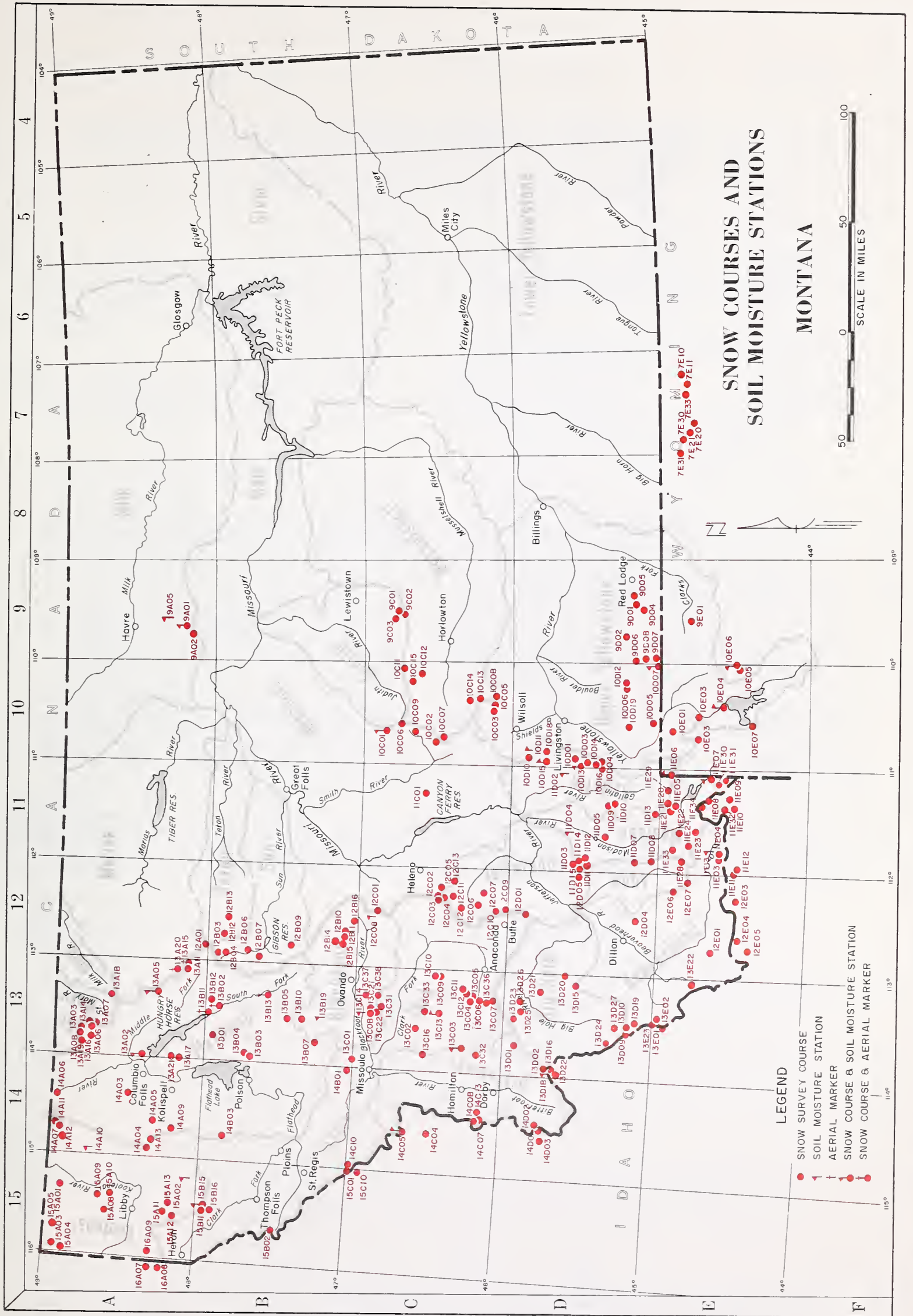
Elev.

7350

Drainage.

Yellowstone





INDEX to MONTANA SNOW COURSES and SOIL MOISTURE STATIONS

SNOW COURSES

Drainage Basin & Snow Course	Number	Elev.	Sec.	Twp.	Range	Record Begun	Measuring Dates 1/2	Meas. By 2/	Drainage Basin & Snow Course	Number	Elev.	Sec.	Twp.	Range	Record Begun	Measuring Dates 1/2	Meas. By 2/
COLUMBIA RIVER BASIN																	
KOOTENAI RIVER									BEAVERHEAD RIVER (continued)								
Bald Eagle Peak	15A11	5700	6	27N	31W	1969		1	Grizzly Peak	1005	7480	9	10S	15W	1948	3-4	1
Garfield Mountain	15A08	5600	4	32N	30W	1969			Lehigh Ridge	13E01	8100	4	10S	15W	1948	3-4	1
Baree Creek	15B11	5500	36	26N	31W	1956	3-4, 5, 5.6	1	Lemhi Ridge	13E23	8100	4	10S	15W	1947	3-4	1
Baree Midway	15B16	4600	31	25N	30W	1966	2, 3-4, 5, 5.6	2	Trail Creek	13E02	7090	15	10S	15W	1948	3-4	1
Baree Trail	15B15	4600	5	25N	30W	1965	3-4, 5, 5.6	2	White Pine Ridge	12E01	8850	18	14S	9W	1948	3-4, 5	1
Bristow Creek	15A10	3900	2	32N	30W	1937	3-4, 5, 5.6	1	White River								
Brush Creek	16A04	5000	12	30N	26W	1969	3-4, 5	1, 2	Brumham Lakes	11D44	8850	5	4S	3W	1967	3-4, 5	1, 12
Brush Creek Timber	16A13	5000	12	30N	26W	1969	3-4, 5	1, 2	Clower Meadow	11D08	8600	28	9S	2W	1963	3-4, 5	1
Clear Grove	15A13	5000	12	30N	26W	1969	3-4, 5	1, 2	Divide	12E02	7850	14	12S	9W	1963	3-4, 5	1
									Madeline Mill Creek	11E02	7850	11	12S	9W	1963	3-4, 5	1, 12
									Northfork River	12D06	8500	18	11S	4W	1963	3-4, 5	1
									Rocky River	12D05	6900	24	11S	3W	1962	3-4, 5	1, 12
UPPER YELLOWSTONE RIVER (continued)																	
									Sacra Avenue	10C03	6500	10	4N	10E	1938	3-4, 5, 5.6	1, 6
									Sacra Avenue	10C03	6550	36	2N	6E	1960	3-4, 5	1
									Shirley Fork	10C08	8100	13	4N	10E	1961	3-4, 5	1
									Timberline Creek	9D04	8850	10	8S	18E	1965	3-4, 5, 5.6	1
									West Rosebud	9D02	7500	9	7S	16E	1960	3-4	1
									White Mill	9D08	8700	18	9S	15E	1966	3-4, 5, 5.6	1, 2

SOIL MOISTURE STATIONS

COLUMBIA RIVER BASIN														
Bascoo Peak	16803	5150	31	28N	25W	1961	3,4,5	1	1,5					
Beaver Lake	13A11	5900	31	28N	11W	1964	3,4,5	1						
Big Creek	13003	6750	7	22N	18W	1941	3,4,5	6	1,5					
Camp Macey	13A17	5400	30	28N	18W	1962	3,4,5	4	1,2					
Swart Mountain	13002	2800	24	28N	18W	1962	1,2,3,4,5	6	1,2					
Swart Creek	13001	2800	24	28N	18W	1962	3,4,5	6	1,2					
Flapjack Mountain	13A19	6300	12	35N	18W	1966	3,4,5	1	1,6					
Griffin Creek Divide	13A19	5150	11	28N	25W	1960	3,4,5	1	1,5					
Gunsight Lake	13A12	6300	35	26N	14W	1964	3,4,5	1						
Hell Roaring Divide	14A03	5770	35	32N	22W	1942	1,2,3,4,5,5,6	2	1					
Hillbrook	13A13	4530	18	31N	13W	1951	1,2,3,4,5	1						
Kishenehn	14A06	3890	14	37N	22W	1954	3,4	6	1,2					
Logan Creek	14A05	4300	34	30N	24W	1937	3,4,5	1						
Marias Pass	13A05	5250	34	30N	14W	1934	1,2,3,4,5	1	1,2					
Mineral Creek	13A16	4000	29	35N	17W	1957	3,4,5	2	6					
Noisy Creek	13A21	3600	35	28N	19W	1970	3,4,5	1,2						
North Fork Jocko	13807	6330	3	17N	17W	1941	3,4,5,5,6	1,5						
Spotted Bear Mountain	13802	7000	23	25N	15W	1948	1,2,3,4,5	1						
Trinkins Lake	13801	6100	9	22N	17W	1948	3,4,5	1						
Trin Creek	13811	3580	28	28N	16W	1951	1,2,3,4,5	1						
Upper Holland Lake	13805	6200	28	20N	15W	1948	3,4,5	1						
CLARK FORK RIVER														
Black Pine	13C13	7100	26	8N	15W	1959	1,2,3,4,5,5,6	1						
Combination	13C33	5600	7	8N	14W	1971	1,2,3,4,5	1	1,2					
Copper Bottom	12B16	5200	15	15N	8W	1971	1,2,3,4,5	2						
Berry Meadow	12C07	7700	13	5N	1962	3,4,5	1							
Copper Mountain	12C09	7700	13	3N	7W	1966	2,3,4,5,5,6	4						
Pez Perce Creek	12C10	6500	16	4N	6W	1967	2,3,4,5	4						
Pine Gne Grounds	12C06	6500	21	5N	6W	1941	2,3,4	4						
Pipetstone Pass	12C01	7200	10	18N	7W	1938	1,2,3,4,5	1						
Rockier Peak	12C11	8000	17	7N	5W	1968	1,2,3,4,5	1						
Uncle Sam Gulch	12C12	6500	32	7N	5W	1968	3,4,5	1						
MADISON RIVER														
Call Road	11D07	8050	21	8S	2W	1962	3,4,5	1						
Four Mile	11D12	6900	20	10S	2W	1965	3,4,5	1						
Heck Creek	11D05	7500	22	11S	3E	1934	3,4,5	1						
Heck Creek	11D05	7500	22	11S	3E	1934	3,4,5	1						
Lake Creek	11E22	6100	27	11S	1E	1965	2,3,4,5	2						
Lion Mountain	11E28	8760	23	11S	2W	1967	2,3,4,5	2						
Lower Twin	11D11	7900	12	4S	3W	1965	3,4,5	1						
Nadson Plateau	11E31	7750	28	14S	5E	1968	3,4,5	1,2						
Merridian Creek	11E23	7000	31	12S	1E	1965	2,3,4,5	2						
North Meadow	11D03	7500	24	3S	3W	1961	3,4,5	1						
Pocmageton Park	11E21	7150	33	10S	3E	1965	3,4,5	2						
Sentinel Creek	11E20	8300	17	10S	3E	1965	3,4,5	2						
Soap Bogus Divide	11E33	7600	19	11S	1E	1968	3,4,5	2						
Tepee Creek	11E24	8000	15	12S	1W	1965	2,3,4,5	2						
Whispering Willow	11E07	6700	34	13S	5E	1934	1,2,3,4,5	1,3,6						
Whiskey Creek	11E30	6800	19	14S	5E	1967	3,4,5	2						
KOOTENAI RIVER														
Sawee Trail	15B15M	3800	5	25N	30W	1964	Monthly	2						
Murphy Lake R.S.	14A10M	3000	5	34N	25W	1964	Monthly	2						
Raven R.S.	15A02H	3050	2	26N	29W	1964	Monthly	2						
FLATHEAD RIVER														
Desert Mountain	13A02M	5600	24	31N	19W	1956	Monthly	1						
Marias Pass	13A05M	5250	34	30N	14W	1950	Monthly	6						
CLARK FORK RIVER														
Black Pine	13C13M	7100	26	8N	15W	1965	Monthly	1						
Seetley Lake	13B19H	4030	21	17N	15W	1963	Monthly	2						
Skalkaho Summit	13C03M	7260	30	6N	17W	1964	Monthly	1						
BITTERROOT RIVER														
Gibbons Pass	13D18M	7100	4	2S	19W	1962	Monthly	1						
Libo Pass	14C05H	5250	11	10N	24W	1963	Monthly	1						

MISSOURI RIVER BASIN

Fred Bear Pass	13011	8000	12	63	134	1957	3,4,5	1	10004	8100	4	55	6E	1935	1,2,3,4,5,53,6	1	BEAVERHEAD RIVER										11E13N	6700	23	14S	2W	1962	Monthly	10		
Gold Creek Lake	13010	7200	14	68	134	1949	3,4,5	1	10003	6600	22	45	6E	1935	1,2,3,4,5,53,6	1	BEAVERHEAD RIVER										Lakeview	11E13N	6700	23	14S	2W	1962	Monthly	10	
Heart Lake Trail	14C10	4800	11	16N	274	1965	1,2,3,4,5,53,6	1,2	10013	6860	10	45	6E	1964	1,2,3,4,5,53,6	1	BEAVERHEAD RIVER										Lakeview	11E13N	6700	23	14S	2W	1962	Monthly	10	
Noodoo Basin	15C10	6000	17	16N	274	1967	1,2,3,4,5,53,6	1,2	10110	7400	22	6S	3E	1963	3,4,5	1	BEAVERHEAD RIVER										Lakeview	11E13N	6700	23	14S	2W	1962	Monthly	10	
Bando Creek	15P01	5900	16	14N	274	1937	1,2,3,4,5,53,6	1,2	10018	6100	19	6E	1937	1,2,3,4,5,53,6	1	BEAVERHEAD RIVER										Lakeview	11E13N	6700	23	14S	2W	1962	Monthly	10		
Intergaard	13004	6450	6	5N	134	1936	1,2,3,4,5	1	10016	8700	14	5S	6E	1939	1,2,3,4,5,53,6	1	MADISON RIVER																			
Lubrecht Flume	13C38	4800	13	13N	144	1971	1,2,3,4,5	1	10016	8700	14	5S	6E	1966	1,2,3,4,5,53,6	1	MADISON RIVER																			
Lubrecht Forest No. 3	13C21	5450	19	13N	144	1951	1,2,3,4,5	1	10131	8500	26	1	11S	5E	1934	1,2,3,4,5	3	MADISON RIVER										West Yellowstone	11E07N	6700	34	13S	5N	1966	Monthly	6
Lubrecht Forest No. 4	13C22	4650	23	13N	134	1951	1,2,3,4,5	1	11D06	7150	1	11S	5E	1934	1,2,3,4,5	3	MADISON RIVER										West Yellowstone	11E07N	6700	34	13S	5N	1966	Monthly	6	
Lubrecht Forest No. 6	13C29	4600	22	13N	124	1971	1,2,3,4,5	1									MISSOURI RIVER MAIN STEM																			
Lubrecht Forest No. 7	13C30	4650	22	13N	124	1971	1,2,3,4,5	1	9A02	5200	21	28N	16E	1967	1,2,3,4,5	7	MISSOURI RIVER MAIN STEM																			
North Fork Elk Creek	13C31	6250	20	13N	134	1968	1,2,3,4,5,53,6	8	11001	7950	1	9N	3E	1936	1,2,3,4,5	3	GALLATINE RIVER																			
Pecoraon Meadows	13C36	7200	2	4N	144	1971	1,2,3,4,5	1	12005	6200	2	8N	5W	1936	1,2,3,4,5	3	GALLATINE RIVER																			
Red Lion	13C12	7100	22	6N	134	1958	3,4,5	1	10059	6450	23	12N	8E	1966	1,2,3,4,5	1	GALLATINE RIVER										Bridgeport	10D15M	7250	25	1N	6E	1966	Monthly	1	
Saalkaho Summit	13C03	7250	30	6N	174	1937	3,4,5,53,6	1	10015	7600	34	11N	11E	1969	3,4,5	2	GALLATINE RIVER										College Site	11D02M	4856	18	2S	5E	1956	Monthly	1	
Slide Rock Mountain	13C02	7100	35	10N	164	1937	3,4,5	1	10013	7000	2	5N	10E	1969	3,4,5	2	GALLATINE RIVER										Lick Creek	10D13M	9860	10	4E	6E	1965	Monthly	1	
Southern Cross	13C05	6500	8	5N	134	1936	2,3,4	4	10017	8000	10	8N	8E	1963	3,4,5	2	GALLATINE RIVER										Twenty-One Mile	11E08M	7150	1	11S	5E	1963	Monthly	6	
Storm Lake	13C07	7780	19	4N	134	1939	1,2,3,4,5	1	10014	6500	26	6N	10E	1969	3,4,5	2	MISSOURI RIVER MAIN STEM																			
Stark Mill	13C06	6500	19	5N	134	1936	1,2,3,4,5	1	10014	6500	26	6N	10E	1969	3,4,5	2	MISSOURI RIVER MAIN STEM																			
Stark Mountain	13C01	7400	6	14N	184	1936	1,2,3,4,5,53,6	8	10002	7000	19	9N	8E	1938	3,4,5	1	MISSOURI RIVER MAIN STEM										Kings Hill	10C01M	7620	34	13E	8E	1963	Monthly	1	
Stuart Mountain	14B01	6800	33	13N	194	1956	1,2,3,4,5,53,6	8	10012	7000	19	9N	8E	1938	3,4,5	1	MISSOURI RIVER MAIN STEM										Stemple Pass	12C08M	6350	16	13N	7W	1963	Monthly	1	
BITTERROOT RIVER																	MILK RIVER																			
Ambrose	13C16	6480	28	9N	184	1960	3,4,5	1	10001	7500	34	13N	8E	1934	3,4,5,53,6	1,3	MILK RIVER																			
Coyote Meadows Trail	13C32	7000	20	4N	184	1969	3,4,5	1	12001	6600	16	13N	7W	1934	3,4,5	3	MILK RIVER										Beaver Creek	9A05M	3950	21	20N	16E	1969	Monthly	1	
East Fork R.S.	13C01	5400	16	2N	174	1937	3,4	1	12002	6600	12	8N	6W	1935	1,2,3,4,5	3	MILK RIVER										Rocky Boy	9A01M	3950	21	20N	16E	1969	Monthly	1	
Gibboma Pass	13C02	7100	4	2S	194	1934	1,2,3,4,5,53,6	1,3	12003	6800	13	8N	6W	1934	1,2,3,4,5	3	MILK RIVER																			
Loat Horse	14C07	5940	5	4N	234	1960	3,4,5,53,6	1	12004	8000	19	8N	5W	1935	1,2,3,4,5	3	MILK RIVER																			
Nez Perce Camp	14C02	5580	19	1S	234	1937	3,4,5	1									SUN-I-TETON-MARIAS RIVERS																			
Nez Perce Park	14C01	5570	25	1S	244	1937	3,4,5	1	13A15	6900	4	27N	11W	1964	1,2,3,4,5	1	SUN-I-TETON-MARIAS RIVERS																			
Twiddle Mountain	14C03	5260	23	1S	244	1963	1,2,3,4,5,53,6	1	13A15	6900	4	27N	11W	1964	1,2,3,4,5	1	SUN-I-TETON-MARIAS RIVERS																			
Twiddle Creek	14C12	5260	26	1S	234	1963	1,2,3,4,5,53,6	1	13A15	6900	4	27N	11W	1964	1,2,3,4,5	1	SUN-I-TETON-MARIAS RIVERS																			
Twin Lakes	14C08	6510	32	5N	234	1960	1,2,3,4,5,53,6	1	13A15	6900	4	27N	11W	1964	1,2,3,4,5	1	SUN-I-TETON-MARIAS RIVERS																			
ST. MARY RIVER BASIN																	YELLOWSTONE RIVER																			
Nudson Bay Divide	13A18	5800	24	36N	144	1962	3,4,5	3	13A15	6900	4	27N	11W	1964	1,2,3,4,5	1	YELLOWSTONE RIVER																			
Leebigh Lake No. 3	13A03	5600	1	35N	174	1922	3,4,5	3,9	13A15	5900	25	28N	11W	1969	1,2,3,4,5	2	YELLOWSTONE RIVER																			
Loophill Lower No. 9	13A14	5600	22	35N	164	1955	3,4,5	3,9	13A15	5900	25	28N	11W	1969	1,2,3,4,5	2	YELLOWSTONE RIVER																			
Loophill Upper No. 9	13A14	5600	22	35N	164	1955	3,4,5	3,9	13A15	5900	25	28N	11W	1969	1,2,3,4,5	2	YELLOWSTONE RIVER																			
Pleasant Pass No. 6	13A06	5500	27	35N	184	1922	3,4,5	3,9	12B04	5700	17	25N	9W	1969	3,4,5	2	YELLOWSTONE RIVER																			
Pleasant Pass No. 8	13A08	5800	36	36N	174	1937	3,4,5	3,9	12B03	6800	17	25N	10W	1949	3,4,5	2	YELLOWSTONE RIVER																			
LEGEND																	LEGEND																			
1/ Numerals 1,2,3,4,5,53,6 refer to January 1, February 1, March 1, April 1, May 1, May 15																	LEGEND																			

MISSOURI RIVER BASIN

[illegible]

LEGEND

1/ Numerals 1,2,3,4,5,5 $\frac{1}{2}$,6 refer to January 1, February 1, March 1, April 1, May 1, May 15 and June 1.

2/ Numerals refer to Agency that makes the snow survey as follows:

1. U. S. Soil Conservation Service
2. U. S. Forest Service
3. U. S. Geological Survey
4. Montana Power Company
5. U. S. Indian Service
6. U. S. National Park Service
7. MSU Agricultural Experiment Station
8. U. of M. School of Forestry
9. Department of Energy, Mines & Resources
10. U. S. Bureau of Sport Fisheries & Wildlife
11. Private Contractor
12. Soil and Water Conservation District

Agencies and Organizations Cooperating in Montana Snow Surveys

U. S. Forest Service
Region I, Missoula, Montana
Montana Forests and Ranger
Districts

U. S. Geological Survey
Helena, Montana
Portland, Oregon

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Walla Walla, Washington
Omaha, Nebraska

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana
Portland, Oregon
Kansas City, Missouri

U. S. Bureau of Sports Fisheries
and Wildlife
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

U. S. Bonneville Power Administration
Portland, Oregon

U. S. Soil Conservation Service
Montana, Wyoming, Idaho

Soil and Water Conservation Districts
Montana Counties

U. S. National Park Service
Yellowstone National Park
Glacier National Park

Montana Power Company
Butte, Montana

Montana Water Resources Board
Helena, Montana

North Montana Branch Station
Agricultural Experiment Station
Havre, Montana

Montana State University
Agricultural Experiment Station
Bozeman, Montana

University of Montana
School of Forestry
Missoula, Montana

Water Rights Branch, Dept. of
Lands and Forests
Victoria, British Columbia

Department of Energy, Mines and
Resources
Calgary, Alberta

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*"The Conservation of Water begins
with the Snow Survey"*